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ABSTRACT

This study investigated the methods and effects of introducing a teacher development program aimed at improving student learning across the curriculum at two secondary schools in New Zealand. A particular target was the lowest achieving 30 percent of learners who were identified as "less proficient learners." The teachers were volunteers drawn from the whole staff of each school. The study focused on how teachers took up the opportunity, the effects of the program on their beliefs and practices, effects on student beliefs and practices, changes in student academic and social behavior, and costs of implementing the program on a wider basis. Data were gathered through teacher and principal questionnaires and interviews before and after the project, teacher reports and diary notes, comments from working meetings and interactions with students and teachers, and student test results. Among the findings from the data analysis were: teachers did reorient their delivery of curriculum material and the environment in their classrooms in accordance with developing literature on effective classrooms and in a personally reflective way; a collaborative style of work developed among the teachers that reflected the cooperative group learning programs the teachers were establishing in their classrooms; and students demonstrated increased abilities in use of learning strategies and in subject materials. Appendixes contain data on tracing advance organizers; questionnaire definitions for teachers, students, and principals; and advisory committee meeting definitions. (JB)

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ED 378 169

THE DEVELOPMENT OF STRATEGIC CLASSROOMS

IN TWO SECONDARY SCHOOLS

D F BROWN

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Don Brown
December 1992

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EXECUTIVE SUMMARY

This study followed a pilot project in which a number of secondary schools worked with the author to investigate the value of introducing what has been described variously as strategic classrooms, a strategic environment and the application of cognitive strategies in learning settings. Teachers in the two schools involved in the study were volunteers drawn from the whole staff. Some had worked with the author during the pilot project while others were new to the programme activities.

The purpose of the project was to investigate the methods and effects of introducing a teacher development programme to secondary schools, aimed at improving student learning across the curriculum. A particular target was the lowest achieving 30% of learners. The term less proficient learners was chosen to identify the group.

The study looked at: (a) how teachers took up the opportunity, (b) the effects of the programme on their beliefs and practices, (c) effects upon student beliefs and practices, (d) changes in student academic and social behaviour, (e) the costs of implementing such a programme on a wider basis.

Teachers were offered a menu of teaching strategies from which to choose, which had been shown in the literature to be effective. The strategies were drawn from a number of sources. Cooperative learning was defined as a strategy for the purposes of the programme. The others included strategic approaches developed at the Kansas University Institute for Learning Disabilities and those reported by a number of other agencies and researchers. During the programme some adapted and original strategies were developed collaboratively by the teachers and the author.

Prior to the programme beginning, teachers and members of the principals' group were asked to comment on a range of questions put to them in a questionnaire and personal interview respectively. These questions formed the basis for establishing changes in beliefs and practices over the project period. On completion of the programme, teachers and the principals' group were asked the same questions, together with additional questions relating to activities, events or viewpoints which had been developed during the programme. Students were also invited to respond to a series of questions which tapped their beliefs and behaviours at the end of the programme.

During the course of the programme teachers kept reports and diary notes. Records were retained of these and responses from the consultant to teachers. Student comments and comments from some parents were kept. Classroom measures of student academic and social progress were kept regularly by a number of teachers.

The task of developing new teaching strategies and creating a strategic environment was approached in different ways by different teachers. Teachers were free to incorporate those aspects of the programme which suited their teaching style. Some teachers took up the goal of developing a strategic classroom environment. Thus strategies were engaged by various teachers in various ways, from the use of single strategies such as advance organisers, through multiple strategy use, to efforts to combine a range of strategies in a comprehensive and cohesive fashion. Almost every teacher used cooperative learning as a means of delivery for curriculum material, many teachers used it as a vehicle for the establishment of strategies for teaching and to establish learning strategies.

The move away from traditional, didactic teaching programmes toward strategic, group oriented programmes was a gradual one for most teachers. Working with the consultant, the teachers established the programmes which suited their own purposes best, trialled the strategy and made decisions about how much further to take that strategic approach or to trial a further approach.

The consultant was the author. The consultant visited each school for one full day each week for terms two and three of 1991. The programme was structured to meet the needs and requirements of each school. Both schools established a regular meeting for about one hour each week. This meeting was held at the beginning of the school day – before classes started, during the lunch hour or at the end of the day after classes were finished. In each school the consultant would meet with teachers individually to plan, discuss or advise on programme activities during regular periods, during breaks in the working day, or before or after school as appropriate to the school's meeting arrangements. Finally, the consultant was invited into classrooms on a regular basis to observe, assist or measure programme activities.

Certain agreements had been reached for the work of the consultant. The consultant was available on a collaborative basis. Teachers and the consultant worked as collaborative teams or partners. The model adopted was one of "equal expertise" with each party bringing their own particular skills and insights to the discussions. Comments between the consultant and teachers were confidential unless the teacher agreed to share the information more widely. All teachers agreed that material gathered in the course of the project could be used in reporting the results of the work but no names would be used. The schools agreed to the use of student data being reported. Parents were informed of the nature of the programme either through regular newsletters or, in one school, a meeting of interested parents was called.

Ten teacher release days were allocated to each school by the ministry. These days were used to enable teachers to meet with the consultant in class contact time, to act as peer reviewers in each other's classrooms and to visit the other school or attend a special seminar arranged for the two teams of teachers. The probability of continuance of the programme was maximised by teacher ownership of new initiatives. Outcomes would be perceived as realistic, able to be repeated in the absence of the consultant as the result of behaviours which were intrinsically motivated.

In each school one member of the "top three" principals' group acted as coordinator for the programme. In addition, one or more teachers in each group acted as staff spokespersons and joined the advisory committee for the project. This committee also included parent representatives.

Through the coordinator, the consultant arranged the weekly meetings, period by period observations or discussions and collected diary notes. Each teacher kept a diary of their work as a permanent record. A copy of the diary was given to the consultant each week (or collected and given at regular intervals). The consultant responded to each diary with a response sheet, delivered the subsequent week. Notes taken by the consultant were handed to the teacher at the end of each discussion. The teacher was free to keep the notes or photocopy them and return a copy to the consultant, which they invariably did.

From these diaries and the response sheets a log of communications was compiled. The diaries became a progressive record of growing skill both of the teachers and the consultant.

Teacher completion rate of the programme was very high. Twenty-six of the 31 who began working in the programme completed it. Not all teachers were as involved as others, but those who left the programme did so largely because of pressure of other work. Enrolment in further development programmes which originated from this programme have since indicated a marked trend toward greater teacher involvement in the work, both in numbers and intensity of involvement.

The teachers reported their results in a number of ways. Diaries were used for week by week reports of student progress. Improvements in student outcomes were reported which suggested a clear and reliable trend of improvement in academic and collaborative skills.

The teacher questionnaires show a number of trends. The first is a greater recognition among the teachers of the need for and importance of cognitive strategies for effective learning. This was demonstrated in questions which sought to tap teacher beliefs and those which asked teachers to report their use of strategic approaches and the results they obtained from them.

There was a very clear indication of the use of cooperative groups. All but two teachers in the total 26 reported some degree of cooperative teaching in their classrooms. Many teachers had already begun using these groups during the pilot project and in the interval between the pilot and this project. The most important trend was in the way the groups were used. More teachers used used appropriately sized groups, allocation to groups was more teacher directed and targeted at heterogeneity. Though the trend was less marked, more teachers directly taught the essential collaborative skills needed for effective group work.

At the final advisory committee meeting the consultant took detailed notes of the comments made, leaving the teachers to interact freely with the officers of the ministry, the ministry advisers and the parent representatives. What emerged at these final meetings was a strong advocacy for continuance of this kind of programme; the value of collegial, across department development opportunities; and strong statements about the advantages of the programme to students and to teachers. The value to schools of having a consultant was stressed.

Teachers cited examples of success for students and their own feelings of confidence and continuing interest in the programme. Some remarked upon the value of the programme as a professional development opportunity. In this context the need for preservice training was raised and some comparisons were made between the programme as training, compared to college of education training patterns.

The principals' group or "top three" in each school played an important part in the programme. Without their support, the liaison with staff, the encouragement they gave and their endorsement of the programme it would have been a much more difficult exercise.

In their responses to pre and post programme interviews, the principals' group saw value in the programme from the beginning, based upon their experiences of the pilot project. They maintained this view through to the concluding interview, indeed strengthening their comments on staff enthusiasm and the need for a collaborative planning approach. With respect to planning, the principals emphasised their intentions to plan ahead, to commit resources and support to continuance of the programme into the new year.

Principals did not find the programme brought pressure upon them. They found in some senses the opposite – that staff enthusiasm and commitment was a source of support for them. Their interest in sharing management of the programme with staff was notable.

The principals began by believing that student success and, as a corollary prevention of student failure, lay in the hands of teachers. They increased this view, noting the need for good teaching strategies.

An encouraging feature of the programme outcomes was the systems based approach which prevailed throughout. Rarely was an individual student identified as presenting a particular challenge to teaching On the one or two occasions this did occur, it was within the context of classroom programmes. This systems model was maintained across the curriculum with teachers of various subjects working together on lesson plan discussions, the application to the learning process of the principles of cooperative learning groups or of various strategies.

This systems model probably developed through the way in which the programme was introduced. To some extent the difficulties reported by Glynn, Moore, Gold and Sheldon (1992) were avoided because the consultant was from outside the schools, had a clear systems focus, was credible to the principals and staff, was inclusive of all students while targeting a particular group of less proficient learners, and had a clear and unambiguous role completely insulated from other teaching or administrative demands.

SUMMARY OF RESULTS

The results of this programme are drawn from informal classroom measures of student progress, student comments reported by teachers, questionnaire responses on student perceptions, teacher commentary through meetings, diaries and interviews, their responses to questionnaires and the comments of the principals' group when they were interviewed.

STUDENT PROGRESS AND SATISFACTION

1. Throughout this report there are representative examples of student academic progress. The linkage between test-retest and teach-reteach activities is compelling. Examples have been given of students demonstrating increasing abilities in the use of learning strategies (eg paraphrasing) as well as in academic progress in subject domain material (eg test/group-work/test activities).

2. Preparation for examinations has been illustrated through study, test taking and motivational methods. Students have reported positively on the value of this preparation and there are in-school examination results to demonstrate improved performance.

3. Examples have been given of unsolicited comment from students to their teachers on the value of such strategies as RAP, the use of spider maps (one of the graphic transformations) and flash cards. Students have also responded positively in anecdotal remarks about their preparedness for examinations, their feelings of satisfaction at making progress and the support they have received from their peers.

4. The overwhelming positive response to the use of cooperative group work even in the highly competitive sixth form has been a particularly important finding in this study. The majority of students enjoyed cooperative group work, could see the value of the demands it placed upon them and demonstrated improved outcomes as a result. Almost without exception students saw advantage in the opportunity to discuss, give and receive help and develop increasing responsibility for their own learning

5. Most students believed the use of strategies in their classrooms assisted them in learning. The fact that students reported not only an intention to use their new found skills for examination preparation but that a large proportion reported already having done so is a strong indication of the utility and value of the strategic classroom environment.

6. An issue which should not be overlooked is the level of enjoyment most students expressed throughout this programme.

TEACHER PROFESSIONAL DEVELOPMENT AND SATISFACTION

1. Throughout the project, teachers expressed an enthusiasm for participating in the programme and reviewing their work in developing strategic classroom environments. The willingness of teachers to continue with the programme, the many hours of their own time which they devoted to developing skills and working collaboratively with their colleagues all attest to a very high level of motivation.

2. The teachers adopted strategies in different ways and at different levels of intensity. The predominant use was reported for cooperative learning, advance organisers and the use of graphic transformations. Nonetheless a number of other strategies were developed and in many cases multiple strategy use could be found in the one classroom.

3. There was a high level of expressed satisfaction among the teachers involved, most of it unsolicited. The opportunity for teachers to comment directly to the advisory committeee and through an anonymous questionnaire produced no negative comments. Reservations were problem-oriented and professionally reflective, and enthusiasm for the continued development of strategic environments remained high.

4. The high level of interest among teachers in further professional development opportunities was notable. The interest created among other schools both in the greater Wellington region and in schools in other parts of the country also speak for the value teachers derived.

PRINCIPALS' VIEWPOINTS

1. At both schools members of the principals' group expressed an intention to provide further opportunities for teachers to continue to develop and practise teaching/learning strategies in their classrooms.

2. Both schools established planning programmes for the new year and both schools identified key people to sustain the growing interest in strategic teaching programmes among their staff.

3. There was consistent and strong support for the use of a consultant from outside the school to work with teachers on such a programme.

CONCLUSIONS

1. The first and most obvious conclusion is that it is entirely possible for teachers to reorient their delivery of curriculum material and the environment of their classrooms in accordance with the developing literature on effective classrooms. A further feature of the work in the two schools has been the collaborative, cooperative interaction of teachers with the consultant.

2. Teachers can effect such a reorientation in a fashion which is personally reflective upon their changing teaching practices.

3. The collaborative, cooperative style of work developed among the teachers reflected the cooperative group learning programmes which the teachers were establishing in their classrooms.

4. This style of programme is successful in improving student performance and highly satisfying to both students and teachers.

5. The organisational structures of secondary schools, which are traditionally subject driven and hierarchical, did not prove an impediment to collegial, across the curriculum support for teachers by teachers. The critical factor enabling this development appears to have been the unifying influence of a highly focused task-oriented group.

6. The support of the "top three" is a necessary component in the successful development of such a programme.

7. An outside consultant who has established credibility and who is willing to work collaboratively with staff can easily interact at all levels of the school organisation. Furthermore, teachers are willing to work with a credible outside consultant both in and out of their classrooms.

8. The economics of establishing such a programme in other secondary schools appears to be well within the resources of current educational funding, depending upon how priorities are set.

9. Consultants for such a programme must be proficient in collaborative consultation, the application of up-to-date curriculum delivery methods and the interpretation of emerging research and development literature to teachers, in their classroom settings.

INTRODUCTION

This study began with a proposal in 1989 to investigate ways in which students who are less proficient in their learning might have their learning enhanced. There are two significant groups of students with special needs at the secondary level – those who have been "mainstreamed" into regular classes and those who have always been in these classes. Both groups might benefit from more careful structuring of the teaching and learning activities in the classroom.

In the case of the former group, there are two critical issues. The first is adapted curriculum activities. The second is the need for an accepting and inclusive environment which forms a significant basis for their mainstream educational programme.

The second group have traditionally been known to teachers as the "tail" of classes. These students have limited educational expectations held for them. There is growing evidence from across the educational sectors (Clay, 1987; Lenz, Alley & Schumaker, 1987) that this does not have to be the case.

In many ways this study is about change in secondary schools. Speaking about the myth of educational change, Beeby (1986) made it very clear that teachers largely control change no matter what those in authority may think. Whether one looks to the current literature (Leithwood, 1992) or reaches further back (Thelen, 1954) the message is the same. As Thelen puts it:

> *"Teaching is what the teacher does. To change teaching means that the teacher himself* [sic] *must, in some respects at least, change. And only the teacher can change the teacher."* (p 73)

Professional development or inservice training is an effort to change teacher behaviour. How this development programme is presented to teachers and how they perceive it is a critical issue which the author attempted to address. Elsewhere the collaborative/ cooperative approach to professional development carried through in this programme is described. The basis upon which this strategic approach was adopted is one of collegial support and a recognition of the concerns teachers have for their development together with the stresses and demands which teachers face every day. To quote Thelen again:

> *"Given the complicated busy confusion of the school, and the typical overloading of work onto staff, and the difficulty of finding energy for long range concerns when forced to meet the deadlines of a new class lesson every fifty minutes – given all these things, it is clear that the inservice training program cannot be just one more task piled on top of teaching: it must be part of operation, part of the way of life of the school; and it must be continuously rewarding and adaptable to individual teachers; yet – it must add up to a better school program."* (p 72)

This study aims to investigate the effects of introducing a number of strategies for learning to students and their teachers in two New Zealand secondary schools. While some aspects of these strategies have been tried before, no systematic application has been attempted.

REVIEW OF THE LITERATURE

ASSISTING THE LESS PROFICIENT LEARNER

There is a long history of concern for students who do not meet the demands of the curriculum. More than a decade ago a major study was carried out in New Zealand to identify students who were failing in school (Walsh, 1979). This study found a number of students who met a discrepancy criterion based upon measures of IQ and achievement. In finding an incidence level of around 6% this study more or less confirmed international estimates often found using reading and a discrepancy model (Rutter & Yule, 1973). It should be noted, however, that incidence figures using this model can go a great deal higher. Chapman, St George and Van Kraayenoord (1984) suggested that 20% of form one students were underachieving.

This higher figure is a better indication of low academic achievement which could be considered as an outcome of schooling. In the mid eighties about a third of students left secondary school in New Zealand without obtaining any formal qualification (Department of Education, 1986). This suggests the school system may well be seen as a social mechanism to ration privilege (Raven, 1988) rather than a learning institution aiming to bring students to a functional level of academic (and social) skill.

There is a difference between measures of discrepancy and examination results. While both are norm referenced, discrepancy figures represent a notion that failure to learn must be judged against a measure of so called potential. School Certificate results represent a socio/political decision of a kind – a decision to ration certification.

These outcome figures can, of course, be changed. By altering the trigger point, the numbers of students emerging with a formal qualification can be increased. Such was the case in 1986 when the gradings of School Certificate were altered. But achievement levels did not alter and around 33% of students continued to fail to meet the criterion set a year before.

In 1985 an amendment was proposed to the Education Act which would have defined a hypothetical condition called "learning disabilities" (Kathy O'Regan: Education [Specific Learning Disabilities] Amendment Bill). The introduction of this Bill arose out of the frustration of the proposer and the SPELD organisation at the lack of resources applied to the population identified by Walsh. The Bill sought to introduce part of the United States legislation, defining learning disabilities.

The clear purpose of this amendment was to attract resources to a group which had been consistently under-resourced. A fundamental difficulty with the definition is that it describes a condition which cannot be reliably identified. The definition is "soft" allowing students with a wide range of characteristics to be included (Adelman & Taylor, 1986). There is no clear evidence that teachers, psychologists or anybody else can reliably differentiate the population (Algozzine & Ysseldyke, 1986).

Before consideration can be given to implementing any programme, the matter of who will be included must be resolved. It is not possible on the available evidence to separate students reliably into categories of learning difficulties. To attempt to do so would create problems of selection using instruments with questionable validity and reliability. It would demand differentiated programmes based upon dubious assignment assumptions. Furthermore, the costs do not justify the resulting possible benefits (Wong, 1986).

Following careful study of the issue, Ysseldyke (1985) concluded that inclusion in teaching programmes should be determined on what he called a socio/political decision-making process. In her work, Clay (1987) has taken the same position. In this approach, the total student population is considered for inclusion in the programme. Accordingly, the programme includes as many students as resources will permit, on a preset criterion.

Such an approach eliminates argument over which students have the greater potential for improvement, who has more complex difficulties or who has too low intelligence to profit from inclusion. Since none of these characteristics can be demonstrated to be distinguishable, consideration of their value awaits resolution elsewhere.

Furthermore, the purpose of an intervention programme may not be targeted best at content teaching in the manner of traditional remedial education. Instead, the introduction of strategies and learning-teaching methods to schools which would enhance the learning rates of students included in the programme may be more helpful (Deshler & Schumaker, 1988; Bulgren, Schumaker & Deshler, 1988). Students should be taught how to learn.

Tindal and Marston (1986) have noted the problem facing educators in finding and putting to use assessment procedures that contribute to establishing meaningful educational programmes. Marston, Fuchs and Deno (1986) have demonstrated the greater sensitivity to student progress over shorter periods of time (approximating one New Zealand school term) for curriculum related assessment compared with norm referenced assessment measures.

The application of curriculum measures in schools requires teachers to recognise the essential characteristics of the procedure. In other words it is not merely a matter of continuous testing. Repeated measures should be used to identify need and provide students with insights into their learning. The measures themselves must be valid for the purpose and the assessment must be reliable over time and assessor. Brown (1984) and Marston and Magnusson (1988) have addressed the problem of implementation.

Though there is a literature on effective schools (Segal, Chipman & Glaser, 1985; Bickel & Bickel, 1986; Brophy, 1986; Wang & Palincsar, 1989) which offers a base of knowledge on how to improve educational outcomes, it is also necessary to take account of the expectation that a certain number of students are bound to fail. This expectation is based upon the use of the normal curve in educational measurement. At present two major influences are coming together to set a more propitious climate for efforts to improve the achievement of students usually judged to be the "tail" of the class or school.

By 1991 schools were required to have in place policies which: (a) identify groups of students who do not experience successful outcomes from their schooling, and (b) offer programmes to ensure this unsatisfactory situation is addressed (Department of Education Implementation Unit, 1989). The Board of Studies signaled the end of norm referenced public examinations by stating that the School Certificate examination should be replaced by achievement based assessment (Board of Studies Newsletter, 1989).

Following the development of interest in learning difficulties in the United States, and particularly since the establishment of the institutes for research on learning disabilities, a number of innovative and successful programmes have been developed which have application to New Zealand. Some of these programmes have evolved in a more general sense in the interaction between special education and regular education while others have evolved as a direct result of efforts to meet the needs of the less proficient learner. These have included cooperative learning (Johnson & Johnson, 1989), the learning strategies approach (Deshler, Alley, Warner & Schumaker, 1981), reciprocal teaching (Brown & Palincsar, 1986; Palincsar, Ransom & Derber, 1988/89), applied behaviour analysis (Lovitt, 1975; Koorland, 1986; Glynn, 1989), metacognitve strategies (Palincsar, 1986; Garner, 1987) paired reading (Topping, 1987), peer learning arrangements (Damon & Phelps, 1989), learning and studies strategies (Weinstein, 1987), home and school cooperation (McNaughton, Glynn & Robinson, 1981; Awatere, 1982).

There is promise in all these approaches. All can be shown to have been successful in some cases. There are questions also which arise from their use. Pressley, Goodchild, Fleet, Zajchowski and Evans (1989) point to the complexity and sheer hard work involved in the development of classroom strategy instruction. Such programmes need to be well coordinated or they can become disjointed and, at least potentially, lose effectiveness (P. Doherty, New South Wales, personal communication, August, 1989). It is also important to begin with modest programmes and with strong teacher support (Strategram Newsletters, 1989). Finally there is the issue of transfer of educational practice from one culture to another (Brown, 1989).

Some work has begun in New Zealand to test these models. Medcalfe (1989) has investigated peer interaction programmes, Gilroy and Moore (1988) have used reciprocal teaching to foster comprehension and comprehension monitoring, and Howse and Falconer (1987) have attempted to transfer what is basically a primary school model to an across the curriculum, secondary school approach.

This last example highlights one of the major issues facing those who wish to develop a strategies model in secondary schools. Though it cannot be taken as a criticism of the successful Howse and Falconer work, Deshler makes the point that few models exist in secondary schools and primary school models will not do (Deshler, Lowery & Alley, 1979; Schumaker & Deshler, 1988). Schumaker and Deshler (1988) state:

> *".....the wholesale application of (such) proposals to both elementary and secondary schools without acknowledging key differences in organisational structures, curricula and learning variables is a gross oversimplification of a complex problem".*

Some insight into the difficulties of less proficient learners in the secondary setting is provided by Nicholson (1988). Lamb (1987) has demonstrated the demanding and pervasive writing tasks required of secondary students. Schumaker and Deshler (1988) have set out the many obstacles to effective provision of programmes to deal with these and other characteristics of regular secondary school classrooms.

There has also been a continuing debate over where remedial or supportive instruction should be given. In New Zealand the remedial reading clinics have been replaced by itinerant resource teachers of reading who have a greater in-class focus. Many special classes have been disbanded in a similar way and students in many parts of the country now receive their special education in regular classes with the support of a special education teacher.

The Draft Review of Special Education (1987) justified inclusion in regular education classes on the grounds that withdrawal locates responsibility for failure to learn upon the student. The United States Secretary for Special Education used the same argument when she said:

> *"This approach is backed by a storehouse of good intentions – but it does not always work well because its vision is flawed. Although for some the pullout approach may be appropriate it is driven by a conceptual fallacy: that poor performance in learning can be understood solely in terms of deficiencies in the student rather than the quality of the learning environment."* (Will, 1986)

Yet a caution must be sounded. Reading recovery is not carried out in the classroom *per se*. Its implementation is set on a withdrawal or "pull out" model. Deshler (personal communication, 20 July 1989) reported that it was his opinion that the strategies programme was more effective when delivered in a pull out fashion, though less efficient in that it targeted fewer students within the available resources.

Deshler has taken the view that if the policy as laid down by Will (1986) is to be effected, mainstream delivery methods must be developed. The strategies programme developed by Deshler and his colleagues has a component for the development of the regular class teacher in eliciting and maintaining strategic learning approaches by students (Lenz, Alley & Schumaker, 1987).

Robinson (1989) has offered a critique of reading recovery with respect to its impact on the regular classroom. Robinson argues that pull out programmes do not sufficiently influence the school system and that schools and teachers do not change behaviours that contribute to failure to learn. Therefore, before intensive compensatory programmes are effected by withdrawal from the classroom, their introduction in that classroom should be investigated.

It is not at all clear how best to introduce effective strategy training to New Zealand classrooms. School policies on streaming, teacher preferences for grouping and other classroom characteristics will influence the manner of introduction. A formative research style permits an examination of different approaches. Cooperative learning would meet the requirement of peer support suggested by Brown and Campione (1986). Some teachers, however, may prefer to maintain stratified grouping with which they are familiar, while still being willing to introduce strategy training.

In summary, it can be demonstrated that compensatory programmes aimed at teaching young children how to manage the material they must read at school can be successful. It is clear, however, that by the time students reach intermediate and secondary school, the need is for more comprehensive programmes which retain student contact with the subject domain demands of the curriculum and sustain their presence in the social learning situation of the classroom. Further, programmes for less proficient learners must be carried through in a context which recognises the realities of school organisational practices.

It seems possible that the lowest achieving 30% of the student population (except those already receiving special education) could be assisted by applying proven programmes used elsewhere which aim to enhance student learning rates in curriculum activities. To put it another way, students may be assisted best by learning to master their curriculum demands through more effective and efficient learning skills.

In order to do this, students must be taught strategies such as effective goal setting, attending, sentence and paragraph writing, paraphrasing, memorising, test taking, metacognitive skills and the like which have been demonstrated to increase student responsiveness to classroom demands. Glaser (1990) has made the point that acquisition of automatic skills is a foundation for greater understanding and planning ability. As Glaser says: *"The theoretical implication is that major metacognitive changes are an unconscious byproduct of highly practised successful performance."* (p 32)

The application of such an approach is perhaps less obvious. Redding (1990) has shown that teachers can work to make explicit to their students the strategies they are adopting and the reasons for using them. In a project entitled "The Empowering Learners Project", Redding noted:

> *"Some teachers are finding that when they explain the learning principles on which the class activities are based, students begin to sense their own potential and become more active in their own learning."* (p 48)

Teachers would need to ensure newly learned skills are implemented in classroom activities and to arrange, pace and review curriculum material in such a way that student learning skills can be brought to bear.

Since most of the work that has been done in this area originated in North America, it is important too that material which is to be used is modified or rearranged to fit the New Zealand educational culture. It would be necessary to ensure it is compatible with curriculum material and up to date teaching practices.

Essentially, the task is to activate the inactive group of learners who are the lowest achievers in our schools (Lenz, Alley & Schumaker, 1987).

Schumaker, Deshler and Ellis (1986) speak of three components to their programme: (a) curriculum, (b) instructional, (c) organisational. It is important that any programme is able to accommodate all these elements and that they receive sufficient attention, alongside outcome measures.

EFFECTING CHANGE IN SCHOOLS

King, Hayes and Newman (1977) in summarising the Phi Delta Kappan commission to survey staff development programmes noted seven points which could be said to improve dramatically the effectiveness of inservice training and professional development. These were: (a) selection of real needs and obtainable objectives, (b) balancing of personal and organisational benefits as well as individualised and collective offerings, (c) cooperative determination of topic feasibility, (d) commitment on the part of those to be affected by inservice training, (e) skilful and imaginative planning and programming necessary to make the experience rewarding, (f) proficient implementation of the planning, (g) a purposeful evaluation of its effects.

In her enquiry into teacher attitude toward change and improvement in classroom teaching, Sparks (1988) lists five guideline points to increase teacher receptivity to new practices. These are: (a) discussions of how the practices differ from the teacher's present habits, (b) the expected influence of the new strategy on students, (c) small group discussion in which teachers share their positive and negative reactions to the recommended practices, (d) presentations of the theory and research underlying the strategies, (e) testimonials by those who use the new practices.

A major issue is the implementation of a development programme in secondary schools. In a study of the change process in secondary schools Fullan and Newton (1989) noted that secondary schools tend to be content-oriented; they are not used to emphasising innovative instructional methods (p 417). In discussing the importance of school principals in a professional development/change process they noted in particular that internal leadership including principals, vice principals and department heads "*is especially important in large secondary schools. The role of vice principals and department heads in change has been neglected both in theory and in practice*" (p 419)

In a discussion on the dissemination of model programmes, Loucks (date uncertain) cites her own work to list seven critical features for programme adoption. These are: (a) create awareness, (b) establish commitment, (c) provide materials, (d) train, (e) plan implementation, (f) solve problems and troubleshoot, (g) monitor and evaluate. Loucks goes on to note that if a programme requires significant change for staff the leader of the organisation will play a critical role.

> *"The leader of the adopting site is the key. Has she or he established procedures for making and carrying out plans and solving problems as they arise? These are important areas for a leader's attention; without stability and a systematic orientation, any new program will be shortlived."* (p 17)

An overriding feature in discussion of change in professional development is the requirement for time. The fact that change is complex, requires a reorientation of belief systems as well as behaviours, and the sheer logistical complexity of a teaching-learning change programme in the context of a large secondary school all contribute to the clear implication that change cannot occur overnight. One measure of the persistence of a change programme must be the willingness of teachers to continue to participate beyond the immediate life of the programme.

Key staff members such as support teachers would need to become effective consultants to classroom teachers learning these skills. Support teachers would need to understand the value of learning strategies and the reciprocal skills that teachers need to evoke them in the classroom. There is a major training issue involved if this option is taken (Glynn, Moore, Gold & Sheldon, 1992).

An alternative approach would be the use by schools of an outside consultant who could work with staff to enhance the learning-teaching process.

There is evidence to show that while administrative changes can be effected rapidly, schools require a much longer time to bring about lasting programme changes. Such changes must have a level of educational and social validity before teachers will pay more than lip service to them (Beeby, 1986). Schumaker and Deshler (1988) suggest that a period of three to seven years is not unusual for schools to adopt remedial programmes which demonstrate beneficial outcomes.

New Zealand's own experience in curriculum development and Clay's work (1987) and the American experience (Kauffman, Kneedler & Hallahan, 1983) have shown that progress tends to be made only where there is a firm base for programme development and distribution.

For such a programme to succeed, school based research may be needed which includes co-workers (teachers, and students too) in the investigation of how improvements can be developed and effected. Yet this research must still retain a rigorous approach to the data available at a time of change (Candy, 1989). As White (1988) puts it:

> *"We need to reform the dialogue. We need to find some way to merge the knowledge and wisdom of policymakers, professionals, and researchers in the formation of policies for children."*

COLLABORATIVE CONSULTATION

The method by which advice and new information is delivered to schools is important. The consultant must be able to deliver a service which has three essential components. First, it must be consistent with the demands of good teacher development programmes (King, Hayes & Newman, 1977; Sparkes, 1988).

The second requirement is that it must be based upon sound and appropriate knowledge (Idol & West, 1987; Berliner, 1988). In other words, the consultant must have advanced knowledge and be skilful in sharing that knowledge.

Thirdly, the content must have local relevance and have validity within the school's own system. While analyses such as those given by Sparkes offer useful guidance on the arrangement and delivery of advice and development information, the issue of meeting the school's particular needs is not so readily dealt with.

Idol and West note the conflict between finding expertise and involving local resource personnel. This dilemma is very real, as support personnel within the school are unlikely to be significantly more knowledgeable about the process and, as Moor, Glynn and Gold (in press) point out, unlikely to be trained in consultation or interpersonal skills.

The skills required for consultation are defined by Idol and West as:

1. Consultation theory/models,
2. Research on consultation theory, training and practice,
3. Personal characteristics,
4. Interactive communication,
5. Collaborative problem solving,
6. Systems change,
7. Equity issues and value/belief systems,
8. Staff development,
9. Evaluation of consultation effectiveness.

In order to effect training in these skills, Idol and West urge that state agencies provide support for programmes which meet accepted criteria. After comparing apprenticeship with formal training programmes, Gersten, Darch, Davis and George (1990) suggest that such training be carried out through formal tertiary training. Describing a consultative-collaborative model which had "reached relatively mature forms", Freeze, Bravi and Rampaul (1989) show how resource teachers (who are in turn supported by service teams) receive one year full time post baccalaureate training.

The essential ingredient in collaborative consultation in New Zealand secondary schools is the consultant as a systems-oriented adviser. The model of collaborative consultation defined in Idol, Paolucci-Whitcombe and Nevin (1987) is: "*an interactive process that enables teams of people with diverse expertise to generate creative solutions to mutually defined problems*". Idol and her colleagues then apply this model in an indirect approach to dealing primarily with individual students. The application of such a model for schools, departments and individual teachers dealing with whole classes was one of the aims of the study reported here.

STRATEGIES DEFINED

There is no agreed definition of strategies in the literature. Pressley, Goodchild, Fleet, Zajchowski and Evans (1989) speak of "*fully mature strategy use*" (p 302). These authors include terms such as "techniques that accomplish important life goals" and go on to describe metacognition as knowing when and how to use those methods in combination with a rich network of non-strategic knowledge. They then describe strategies as "*processes (or sequences of processes) that, when matched to the requirements of the tasks, facilitate performance*". (p 303)

These authors describe strategies which "set the environment" and those which "engage the mind". They describe "task limited" strategies which "can aid performance in every area of human endeavour" (p 303). They then describe "across-domain" strategies, consisting of "goal limited" such as remembering, comprehending and problem solving and "general" strategies such as checking performance, attending, looking for (other) strategies to use and relating a current situation to previous encounters (p 304). Pressley and his colleagues conclude that "*believing one's own cognitive efforts can be effective may be a very important motivator for the acquisition and use of strategic skills*". (p 307)

Pressley and his colleagues note that strategy instruction is demanding. If taught as an adjunct to subject domain material, the task can seem overwhelming. When integrated into the regular curriculum, however, they become central elements of teaching.

Deshler and his associates describe this integration as a "strategically enhanced instructional environment" (Lenz, Clark, Deshler & Schumaker, 1988). These authors say:

> *"First, we want to teach students strategies that will enable them to apply skills effectively and efficiently to meet content learning demands.*
>
> *Second, we want to create an environment across the school setting that will facilitate strategy instruction and generalisation and compensate for poor strategy knowledge when strategies have been mastered.*
>
> *Therefore, the Strategies Instructional Approach involves more than a set of strategies. It involves what we teach, how we teach it, and how we organise the environment."* (p 24)

Thus, their approach has emerged as an alternative to traditional teaching approaches. They advocate a "dual orientation", what they describe as "*strategic application of skills and knowledge by the individual and strategic organisation and delivery of content by teachers.*" (p 14)

They describe a strategy this way:

> *"First, a strategy is a person's approach to a task. Approach is the key word because we are interested in everything related to meeting the demands of the task from initial recognition to completion and evaluation.*
>
> *Second, it focuses both on how a student thinks and acts. That is, we are concerned with what goes on in the mind and what the person does. Therefore, we are talking about two major types of behavior: cognitive behavior (what goes on in the mind) and overt behavior (what one does).*
>
> *Third, a strategy focuses on a continum of performance that includes components related to what happens before, during, and after the task.*
>
> *Fourth, a strategy includes not only an examination of performance, but what happens as a result of performance. This last aspect relates to our ability to see the relationship between effort and the resulting performance or outcome."* (p 15)

These authors lead us to look at strategies for learning and strategies for teaching. Lockhead (1985) comments on learning strategies by citing Bloom and Broder: "*The major difference between the successful and non successful problem solvers in their extent of thought about the problem was in the degree to which their approach to the problem might be characterised as active or passive (pp 28-29)*" (p 110). As Lockhead noted, "*Good problem solvers brought relevant information to bear on the problem, poor problem solvers did not, even though they often knew the needed information*" (p 110). On teaching strategies, he says "*new curricula usually have little impact on the teacher's style of instruction*" (p 110).

Derry (1989) defined a learning strategy as:

> *"The term is used to refer to (1) specific learning tactics such as rehearsal, imaging and outlining; (2) more general types of self management activities such as planning and comprehension monitoring; and (3) complex plans that combine several specific techniques"* (p 5)

She goes on to describe three major categories – tactics to acquire verbal knowledge; tactics for acquiring procedural skills, eg solving problems, reflective self instruction; and support tactics for motivation. For teachers, Derry offers two types of strategies instruction, "*specific tactics training and training in methods for selecting and combining tactics into workable learning plans.*" (p 9)

Thus, the consultant's approach was to work with strategies as: teacher and student behaviours which enhanced the probability that teaching-learning would be effective, efficient and satisfying.

THE RESEARCH APPROACH

PURPOSE

The purpose of the research was to investigate ways in which teachers in secondary schools could further develop teaching strategies and improve outcomes for students.

The work in the two schools was a follow up from an informal project carried out in 1990 in these two and one other secondary school.

THE TEAMS

The consultant worked with two secondary schools with teams of teachers and their principals. In each school a group of volunteer teachers, some of whom had been involved in the 1990 project, worked collaboratively to develop and practise the use of teaching approaches which were based on strategies established in research and development institutions in various parts of the world but particularly in North America.

The teams were cooperative and collaborative in nature. There was no use of an expert model. Instead the teachers and the consultant each brought their own expertise and enthusiasm to the task.

In one school one member of the "top three" was involved in the programme. In the other, two were involved. In both schools the principals took a strong interest in the work and supported it professionally and administratively.

ESTABLISHMENT

The project was established with the two schools, in the event at somewhat short notice, when the Ministry of Education agreed to sponsor the research. Both schools knew the consultant well so that there was no need for a period of developmental introductions.

Following meetings with the principals' groups in each school, the staff were invited to join the programme. These events took place over the last week of the first school term and the programme began on the first week of the second term. At one school, the consultant had paid some informal visits as the school was close to his home. At the other, the consultant was known from the previous year but there had been no contact during the first term. At this school, a half day seminar was held at the end of the May vacation for all staff interested in volunteering for the programme.

ADMINISTRATION

In each school one or more members of the principals' group acted as the key person in the school. Liaison between the teachers and the consultant and all matters which required day to day management were dealt with by this key person.

Each school also selected one or two members from among the teaching team to act as coordinators and their representatives for official purposes.

A day for visiting was negotiated with each school. Visits would begin at whatever hour teachers were ready to start the work and finished following after class debriefing meetings or consultation.

A parent representative from the board of trustees was nominated for any official communication. The principal usually acted as the liaison person with the board.

DESIGN MATRIX

A design matrix was established to track and monitor the course of the project. The following time line was used:

CONDITIONS	ACTIVITIES			
	Baseline	Preparation	Programme	Review
Organisation committee established				
Teachers recruited				
Teacher commitment agreed				
Classes selected				
Teachers choose and develop strategies				
Teacher peer observation arranged				
Skills review meetings established				
Programme evaluation steps established				

These steps were followed very closely.

THE PROGRAMME

The programme was loosely based on the work done in the pilot project in 1990. On this occasion, however, the intention was to look closely at how such a programme could be introduced. Essentially the programme was based on the assumption that a consultant could work with a school on a one day per week basis for a period of time, to introduce a staff development exercise.

The second assumption was that the continuity of such development should be considered, given that the literature on school development shows that short term programmes seldom yield long term effects.

PROGRAMME MANAGEMENT

The programme began with the consultant offering to work with teachers from a menu of strategic teaching approaches which were appearing in the current professional literature. The consultant outlined a number of options teachers could follow and worked with teachers in developing these options into practical and effective teaching approaches.

The predominant interest, stemming probably from the 1990 work, was in cooperative learning, the use of advance organisers and, for a small number of teachers, the development of language programmes, particularly spelling and paraphrasing strategies.

At one school, the emphasis during 1990 had been on cooperative learning while at the other, greater interest had been shown in the use of advance organisers. A growing balance would emerge and new strategies would be developed.

The opportunity to hold regular meetings of the teams (some of which developed into seminar presentations) was an early feature of the work.

Teachers were quick to take the opportunity to visit each other's classrooms and to invite the consultant to observe their lessons.

SOURCES OF DATA

Data were collected from a range of sources. These were:

1. detailed interviews with the six members of the principals' group;
2. regular meetings with the teachers (these were set weekly);
3. diary exchanges between the teachers and the consultant;
4. individual discussion and planning sessions between the consultant and teachers;

5. classroom observations by the consultant;

6. a questionnaire on teacher beliefs and self reported practices completed at the beginning and the end of the project;

7. teacher reports of student responses and progress while working on the programme;

8. a questionnaire on student reaction to the programme, taken on completion of the project.

A further source of information emerged when the opportunity was taken to invite all the teachers to join the advisory committee to the project for its final meeting. This meeting was arranged for February 1992 and was attended by all the teachers involved in the project who were present on the day.

PARENT INVOLVEMENT

In order that parents would be aware of what was happening in the schools, a parent representative was invited to join the project advisory committee. Schools were also invited to call a meeting of parents and one school did.

Vigorous efforts were made to ensure Maori parents were also informed of the project and the consultant offered to attend local marae if this was the wish of parents.

THE ADVISORY COMMITTEE

The committee consisted of two representatives of the Ministry of Education, two university representatives, the principals of the schools or their nominees, a parent representative and as many teacher representatives as each school chose to appoint.

RESEARCH QUESTIONS

The following questions were established for investigation:

1. What is required to establish a strategic teaching-learning programme for less proficient learners in two schools?

2. What are the effects of such programmes on the academic progress of targeted students?

3. How do the programmes affect students' perceptions of their competence?

4. How could the learning-teaching programme be economically implemented in other secondary schools and what level of funding would be required?

TEACHER RELEASE

In order that the project would not be affected by difficulties over teacher availability, the Ministry of Education agreed to make available a total of 10 days of teacher release to each school, to be spread over two terms. This is consistent with some of the concerns often expressed by teachers that they are asking to undertake trial programmes without sufficient support. In reporting on their research for Phi Delta Kappan, King, Hayes and Newman (1977) note the need to ensure professional development programmes are adequately resourced.

Both schools used the release days to support the programme in a variety of ways. In some cases the use was innovative in the sense that, with staff agreement, careful, even parsimonious use was made of teacher release to ensure individual teachers could have access to the consultant when they needed it most. Both schools used all the days.

The question of whether the days are required in a continuing programme is a moot point. During the 1990 pilot programme and again in the first term of 1991 no teacher release time was available. In subsequent programmes during 1992 no inschool programme has involved additional teacher release time, yet teachers have been available during class time for discussion. The same is true for programmes planned for 1993, where there is no additional release time available, beyond what is available from the schools' current resources.

The issue probably boils down to the availability of teachers during class time. It is clear from our experience that teachers must be able to meet with the consultant during class times at least some of the time. Approximately half the time, the consultant met with teachers on a one to one or one to small group basis in class times. The remaining half was spent in classroom observations and occasional team teaching. Group meetings were held out of teaching hours.

Time for interschool visits and the half day seminar conducted during the programme made strong demands on relieving time since so many teachers were involved all at one time. The half day seminar run during the May vacation by School One would also have made a demand on the schools' resources since the principal of the school chose to offer all teachers who attended a small payment. Not all teachers took up this offer.

As a motivational issue for a development programme, the release time may have been significant. In the case of the May vacation seminar, teachers were able to attend to decide if they wanted to opt into the programme. For others the recognition by the ministry of their commitment was appreciated.

RELIABILITY MEASURES

The reliability in coding and scoring data was managed in two ways. The first has to do with the reliability of coding teacher information. All data obtained from teachers were scored by two individuals working independently. Prior to scoring, criteria were established for coding purposes wherever necessary. Once the scorers had established agreed definitions a sample of papers was taken and independently scored. These scores were compared and disagreements were discussed. Differences of opinion were eliminated within the discussion. Following agreement at this level, one scorer scored all the papers. A second scorer checked a sample of these papers for reliability.

Reliability was measured by taking a percentage of agreements over agreements plus disagreements. Across all measures reliability was maintained at a level between 93% and 100%.

With respect to classroom measures, reliability was more difficult to obtain. Since most classroom measures are taken by teachers in the normal course of their work, a number of these scores are consistent with the normal levels of teacher scoring reliablity.

In order to maximise reliability, wherever it was possible, teachers sought the opinion of a colleague when marking classroom material. Classroom tests results were typically given to a head of department (or another colleague where the head of department was the teacher involved) for a "blind" assessment. In other words, the second marker was naive to the first marker's opinion.

Though no formal measure was taken of disagreements, a remarkable number of agreements was found. It may be that the results supplied by teachers were only supplied when a colleague had confirmed the results and the writer has no knowledge of the possibility that some teachers did not submit marks when they were disconfirmed by a second marker. However, given the nature of the programme activity, this is thought to be an unlikely event.

DEMOGRAPHIC DATA AND TEACHER GOALS

The demographic data taken from the teacher questionnaires are reported below. The definitions developed from the results for open ended questions will be found in the appendices.

TABLE 1

Demographic Data for the Two Schools

CHARACTERISTIC	SCHOOL ONE	SCHOOL TWO
NUMBER	14	12
GENDER		
Female	9	6
Male	5	6
QUALIFICATIONS		
Highest Subject Qualification:		
Masters	2	3
Bachelors (including with honours)	8	9
Diploma/Certificates	4	5
Teacher Qualifications		
Diploma in Teaching	10	11
Trained Teacher Certificate	1	0
No teaching qualifications stated	3	1
TEACHING EXPERIENCE		
Total Years of Teaching:		
0- 5	2	5
6-10	4	2
11-15	3	2
16-20	3	2
21-30	1	1
31 +	1	1
Mean	12.8	12.7
Range	0.5-31	1.5-31.5
Number of Teachers who have Taught at:		
Primary School	2	1) only one
Intermediate School	2	1) teacher
Tertiary	1	0

CHARACTERISTIC	SCHOOL ONE	SCHOOL TWO	
PREVIOUS INSERVICE TRAINING (over 3 years)			
(Mean Days of Training):			
Curriculum	8.5	1.6	
(Range)	0-18	0-6	
ABA	0.7	0.2	(2 teachers each school)
Social Issues	0.4	1.3	(1 teacher each school)
Management	0.1	1.3	
Special Education	0.1	0.3	(1 teacher each school)
Strategies	0	0.4	(1 teacher)
Beginning Teacher	2 teachers	1 teacher	
SUBJECTS TAUGHT			
English	4	5	
Social Studies	3	1	
Biology	3	0	
Science	3	1	
Maths	2	1	
Economic Studies	2	1	
Home Economics	2	1	
Clothing	2	0	
Music	2	0	
Special Education	1	1	
Typing/Shorthand	1	1	
French	1	1	
Accounting	1	1	
Health	1	0	
Horticulture	1	0	
Te Reo Maori	1	0	
ESOL	1	0	
Journalism	0	2	
Computer Studies	0	2	
History	0	1	
Geography	0	1	

CHARACTERISTIC	SCHOOL ONE	SCHOOL TWO
SUBJECTS NOMINATED FOR THE PROJECT		
Social Studies	3	0
Home Economics	2	1
English	2	4
Science	2	1
Maths	1	1
Music	1	0
Accounting	1	0
French	1	0
ESOL	1	0
Biology	1	0
Computer Studies	0	1
History	0	1
Economics	0	1
Not answered	0	2

It can be seen from the above details that the schools were particularly well balanced in terms of the gender mix, the qualifications and the experience of the teachers. There were slightly more female teachers in School One, but at School Two, one male teacher who participated throughout the programme, is not counted in this analysis since he did not complete the post questionnaire.

The qualifications of the two groups are very similar. Their experience is almost identical, the only difference being the number of teachers who had teaching experience outside the secondary school sector in School One.

An interesting difference is the greater mean number of inservice training days enjoyed by the teachers at School One. Perhaps of even more interest is that, with the exception of one teacher, the teaching-learning process appears to have received very little attention in the previous three years in inservice training. Whether this is the result of lack of opportunity or some other factor is difficult to judge, but the alacrity with which teachers joined this professional development programme suggests a high probability for a lack of opportunity.

The teachers were drawn from a wide range of subject areas and nominated classes in an equally wide range for their work during the project.

REASONS TEACHERS JOINED THE PROJECT AND THEIR EXPECTATIONS

Teachers were asked to say why they volunteered to be part of this project. They were then asked to indicate the important goals they had set for themselves and for their students.

In the post questionnaire, teachers were invited to reflect back upon those goals and say what they had achieved for themselves and their students.

TABLE 2

Rank Order Of Reasons Teachers Joined The Project

Category	Combined School Data Rank Order
Improve teaching strategies and teaching skills	1
Improve student learning and student skills	2
Professional interest and personal professional development	3
Credibility of the consultant	4
General benefit to school and others	5
Collegial support and interaction	6

It can be seen that a number of teachers gave more than one reason for joining the project. The clear and most obvious first ranked reason was a wish to improve their own professional skills, followed closely by their wish to ensure their students would improve their learning outcomes.

The next question asked teachers to identify goals for themselves and their students. It might be expected that these would be similar or identical to their reasons for joining, and such proved to be the case in some but not all instances. The following tables indicate the rank order of teacher expectation for themselves and students, and the rank order of outcomes as perceived in the post questionnaire.

TABLE 3

Rank Order of Teacher Goals and Outcomes Teachers Reported

Category	Combined School Data	
	Pre Questionnaire	Post Questionnaire
Improvement in teaching strategies and skills	1	1
Understanding the teaching/learning process	2	2
Improvement in student learning and attitudes	3	3
Motivational issues	4	4 =
Collegial support	5 =	4 =
General benefit to the schools and others	5 =	
Reduced stress	7 =	
Other	7 =	
Success of the project	9*	
Positive student feedback		6
No gain		7*

* one person only

It can be seen from these results that the teachers appear to have achieved the goals they set for themselves. The almost exact ordering of the first five ranked goals speaks very strongly for the perceived success of the programme itself. The teacher who felt no gain had been made wrote on the bottom of the form "*didn't put in much effort*".

TABLE 4

Rank Order of Student Goals and Outcomes Teachers Reported

Category	Combined School Data	
	Pre Questionnaire	Post Questionnaire
Improved learning outcomes and learning strategies	1	1
Improved enjoyment of learning/motivation/awareness of ability/understanding	2	2
Improved social/group skills	3	3
Increased independence	4	4

The way in which this question was posed led to some slight ambiguity in the ways teachers responded. Some teachers included in their answers teaching rather than student outcomes. Where possible these were converted to student outcomes where both judges agreed completely. Where there was no such agreement, the answer was not counted.

Again there is agreement in the pre and post responses indicating that teachers believed they achieved their goals.

Since teachers had no access to the questionnaire information, the agreement between their pre and post questionnaire responses seems quite remarkable.

HOW THE PROGRAMME DEVELOPED

THE NUMBER OF TEACHERS INVOLVED IN THE PROGRAMME

At the commencement of the programme, there were 14 teachers with two observers at School One and 13 at School Two. At the end of the programme, the average attending the last five meetings of the year (or apologising, indicating continuing commitment) was 10 at the first school and 10 at the second.

At School One, two teachers left the programme and one joined, another joined for consultation meetings and in class assistance but rarely attended meetings. The two observers, guidance personnel, gradually dropped attendance as the year progressed. One senior staff member was unable to sustain attendance for administrative reasons.

At the conclusion of the programme 14 teachers from School One and 12 teachers from School Two completed final questionnaires.

To be part of the programme, teachers had to be prepared to give up one lunch hour or equivalent time for a team meeting, attend individual consultations or have the consultant in their room during one day of the week and keep a diary or some other form of record of their on going activities.

In addition, teachers had to suspend judgement on a number of new approaches to teaching while they tried them out, and meanwhile to set aside some or many of their own current teaching approaches as they mastered the strategies being suggested to them.

THE NUMBER OF STUDENTS INVOLVED

It is not possible to tell how many students were included as some teachers involved a number of classes, others only one or two. At the end of the year, teachers were invited to administer a questionnaire to their classes. This serves as some indication of how many students were included but it is a conservative one for two reasons. First, at the end of the year a number of students were absent from school or had left for exam preparation. Second, teachers chose not to administer the questionnaire to some classes where they felt they had not involved that class sufficiently to get a good indication of programme effects. To balance this, one teacher used the questionnaire with a class that had been involved on only one aspect of the programme (though it was highly successful in her view).

The total number of questionnaires received from students was 390.

DURATION AND CONSISTENCY OF THE PROGRAMME

The programme began with introductory meetings in the first week of the second term 1991. At one school, interested staff attended a half day seminar on the last day of the May vacation so that they could be oriented to the work and nature of the tasks involved.

Records were kept of the number of teachers who sought an individual consultation meeting or a classroom observation. These records show a consistent level of interest and teacher activity across the two terms. At the end of the year there was a reduction in requests owing to the demands of the school examination and breakup activites. There was no reduction of any consequence in the numbers attending the meetings. Indeed in one school, 12 teachers turned up a day after school finished in order to review the programme and prepare for 1992.

CONTINUANCE OF THE PROGRAMME

An interesting question was whether the programme would be continued into 1992 by the schools themselves.

In both schools meetings were held to effect such a transfer. Teachers took three actions.

In one school a coordinator was appointed from within the group to act as their key person in 1992. In the other school, sub committees were established to plan for the new year. In this school a buddy system was established to support new teachers in the programme. In both schools, the third form classes were carefully timetabled to be in the hands of one, or preferably two teachers on the programme.

Places were sought on a new teacher development programme being run by the consultant, under contract to the Wellington College of Education. In one school the maximum number of places was taken up. The other school was too distant from the college for places to be taken. The schools sought a similar course in their own locality. Details of these developments are included elsewhere in this report.

Of the available deputy and assistant principals from the two programme schools, at the time of enrolment, all were course members. One later left the course because of pressure of other duties. Given that an essential element of the programme was judged to be the interest and active participation of at least one of the "top three" in each school, the involvement of all available members except the principals themselves, is encouraging.

By involving themselves in the course work, the teachers assured themselves of a further year of diary work with a response to their diaries every second week.

Some teachers also offered invitations to the consultant to visit their school and join in some planning procedures. This has meant that they are now seeing an outside consultant as a source of assistance when they feel they may have reached the limits of their own skills. Or, put another way, the consultant is perhaps seen as someone who can assist staff when complex issues arise.

This matter is dealt with in more detail elsewhere.

PATTERNS OF TEACHER CONSULTATIONS

A pattern of consultations with teachers was established at the beginning of the programme. The purpose was to ensure teachers could keep in touch with each other as a team and deal effectively with the consultant.

Teachers were invited to speak with the consultant in two ways. The first was through a series of regular meetings which were timed to be convenient to teachers. In School One these meetings were held during the lunch hour. In School Two they were held first before classes began (8 am) and later, after classes had finished (3.45 pm). Meetings lasted approximately one hour.

On one occasion following a joint schools meeting it was agreed to hold a formal seminar for the staff of both schools. This seminar led to an exchange of visits between the schools to observe classroom activities of mutual interest to the staff.

MEETINGS

Meetings were held in a separate room in both schools, typically in a small conference room.

The meetings typically began with a "round robin" of teachers telling each other what they had been doing during the week. This was followed by discussion. On some occasions one or more teachers would describe their work in more detail and on two or three occasions in each school a seminar format would be adopted where a teacher or the consultant would give a formal presentation.

Minutes were kept at all meetings so that staff could refer back to their notes where they wanted to follow up any ideas presented.

SEMINAR

The joint seminar was presented by the consultant following upon a request from the teacher representatives at the two schools. The seminar was scheduled for a half day and lasted three and a half hours.

The seminar concentrated upon the essential elements of cooperative learning, components of the learning process and transformation of these concepts and details using graphic and paraphrasing methods. The seminar was constructed in such a way that the activities were a simulation of group building, learning and reconstruction of concepts relevant to the teachers, as if they were a senior class in their schools.

The staff at the two schools were unknown to each other. For this reason the simulation of group building and cooperative activity within a problem solving, goal oriented and active learning process was considered to be relevant to their wishes.

The seminar was evaluated by the staff on an anonymous basis. The results of the evaluation showed the following pattern of response:

TABLE 5

Ratings of Teacher Satisfaction with a Mid Course Seminar

Category	Satisfaction Level	
	School 1	School 2
Relevance of material	96.4%	95.6%
Effectiveness of presentation	100%	93.3%

This was an opportunity for staff to gauge the impact of a cooperative teaching style on their own learning experiences. It was reasoned that if staff were placed in a cooperative learning environment with age and subject appropriate material, they would be in a better position to judge their own and their students' reaction to the method. The consultant modeled the methods the teachers were engaging in their staff development programme.

When asked what were the most useful ideas/strategies presented, all but one teacher across both schools noted some element of cooperative group work.

In their general comments a number of teachers commented on the need for further seminar work, working with colleagues and reinforcing teaching skills that were still in the development stage for them personally.

VISITS

The visits arose from discussions teachers held during the seminar. A number of teachers at both schools asked their colleagues in the other school if they could observe in their classrooms.

Because there was a provision in the project funding for teacher relief funding, it was possible to arrange a visit to each school from the other school. Up to six teachers from each school spent a half day in the other school observing. The major focus of the visits was cooperative learning and the modification of the Kansas University paraphrasing programme developed at School One.

CONSULTATION

The consultation meetings formed the major part of the in-school work. Following discussion with teachers it was agreed that the consultation programme would consist of three aspects. These were one to one or one to small group meetings, class visits and observations, and exchange of diary notes.

The meetings with teachers depended upon their ability to meet during lesson times. Since the relief funding allowance enabled a school to release a teacher for a teaching period, this could be done provided the teacher scheduled the meeting well in advance. In other cases teachers would schedule their non-contact time, or they would do an internal exchange of non-contact time with a colleague.

In many cases teachers would schedule a meeting before or after class time (School One) and in the lunch hour, before or after class time (School Two – where meetings were shifted from before to after class time). Depending on their extra-curricular commitments, teachers would schedule time out of class hours from before 8 am up until 5.30 pm. Given that many teachers had a round trip to their homes in excess of 100 kilometres, this willingness to meet is notable.

In-class observations were always followed by a discussion or exchange of diary notes. Wherever possible the notes taken by the consultant were photocopied and shared between the consultant and the teacher. In every case where this was not possible, the teacher held the observation notes.

To gain an invitation to a class it was necessary for the teachers to have confidence that the visit would be professionally useful, facilitative and confidential. In order to ensure these conditions existed, the consultant set out his position on all three items at the initial meetings with the teachers.

This approach was based on the notion of interdependence with the teachers. By adopting a co-worker approach and completely eschewing any notion of an expert model, all teachers in the programme without exception opened their class to the consultant, many on an open invitation basis.

No teacher expressed concern about confidentiality.

During the first couple of weeks of the programme there was a slow growth in requests for meetings or invitations to observe in classes. This was largely because teachers were settling classes after the beginning of the new term. In other cases there was a slow growth in strategic classroom programmes.

The frequency of meetings has been calculated from an appointments system organised by the deputy or assistant principals at the two schools. The average number of individual consultations per week in each school was 6.9 for School One and 5 for School Two.

The following table shows the pattern of consultations. Note that each school had one day where no visit occurred during that week for reasons of school organisation. Effectively, each school received 22 school visits.

TABLE 6

Numbers of Teachers Consulted Weekly

Week	School 1	School 2
1	4	1
2	7	-
3	10	6
4	8	6
5	8	6
6	-	6
7	6	4
8	7	9
9	7	4
10	6	8
11	11	8
12	5	1
13	1*	3*
14	8	3
15	4	7
16	9	5**
17	8	1
18	7**	7
19	7	4
20	9	7
21	4	7
22	8	4
23	5	4
24	3	1

* Meetings held during the August vacation
** During this visit students/other teachers joined the discussions as observers

WAYS TEACHERS DEVELOPED AND USED STRATEGIES

When choosing from the menu of strategies which was available to them, certain elements of the work appeared to have more appeal to the teachers. Elsewhere in this report the analysis of the use of strategies shows that cooperative learning, use of advance organisers and the use of graphic transformations proved to be the strategic devices most frequently and intensively used by the teachers.

In conceptualising the notion of a strategic classroom, cooperative learning was seen as a vehicle for the delivery of some strategies at least as much as a strategic approach in itself. Furthermore, cooperative learning created an environment in the classroom which, as shown elsewhere, students found to their liking and teachers found satisfying.

THE DEVELOPMENT OF COOPERATIVE LEARNING

For some teachers the use of cooperative groups was a central element of their work, while for others the occasional use of groups or some kind of adaptation of traditional groups methods was all they felt necessary for their purposes. It can be seen from the data on use of cooperative groups presented elsewhere that the development of the social/collaborative skills was perhaps the least used element of this approach. On the other hand, some teachers worked intensively on the development of appropriate role behaviours and the growth of group responsibility.

The following commentary is based upon selections from teacher diaries and the consultant's comments to teachers. It illustrates the growth and development of cooperative learning groups across the two schools.

Example One

Here is a comment from a teacher who took enthusiastically to the programme. This teacher had begun with cooperative groups, and made these comments in her first diary note:

> *"I have decided to tackle* [class] *first. They will be off (or at least 80% of them) to OPC next week so this week is ideal to give cooperative groups a go.*
>
> *I shall leave* [class] *till after their first exam next week, then I'll be able to assess the effects of the various learning strategies I hope to cue with them, by comparing their first and last exams (approximately 60% of the content is the same in each exam) ..... I have tried group tactics with this class before in a limited way with limited success. I hope to get a more positive outcome by tighter controls over what I'm focusing on and on my group activity and selection.*

The class has a full range of ability including both low achievers and high achievers with motivation problems."

This class was concerning the teacher because there were some social issues that the teacher believed needed further consideration. These included a poor tolerance for anyone acting in a different manner with particularly some emphasis upon choice of friends and the reactions of the class to academic achievement. The teacher described this as a "silent rule" which basically stated that it is "not OK" to excel and feel good about it.

Three weeks later the same teacher had this to say:

"Today I have put the students back into cooperative groups and set them on some character work tasks. I did not, this time, go over all the key cooperative group rules, etc, to see how they handled it. They did not click back into it at all. In fact they just worked as a normal group without the cooperative elements. It has been over ten days since they had the concept explained to them so they had forgotten most of it.

It was useful because the following problems arose as a result:

- *unlike last time, individuals were finishing way ahead of others while slower students struggled with the material*
- *some students went off task very quickly*
- *I had to re-explain my instructions several times*

This was a revealing exercise and I found it very useful as a comparison."

This teacher had spent the intervening weeks building skills in the use of graphic transformations at the same time as attempting to build cooperative group work. Using spider maps on the blackboard and eliciting responses from the class she was modelling the transformation of text material to graphics. Her consequent comment is therefore interesting:

"I feel that the class is trending more as a working group (this could be a time factor and/or the improved class atmosphere). I am enjoying my time with them as there seems to be an increase in motivation. I suspect they may be parroting some of my enthusiasm.

I have tested the class on the elements of the novel from the transformations. I was pleased with their responses. There seemed to be a real eagerness to come up with the correct answer. Ninety per cent of those asked gave the correct response at either the first or second prompting."

This teacher became extremely skilful in the use of cooperative group work. At a later date (and beyond the scope of this report) the teacher developed a peer tutoring programme where senior students learned the skills of cooperative group management in order to assist low achieving junior fellow students.

However, within the context of the 1991 programme the teacher made this comment at the end of the second term:

> *"Well, term two is closing and I can honestly say that besides the aching muscles and mental fatigue, I am concluding the term with a good level of satisfaction at my contribution to my students' learning. In previous years I have felt concerned at what I hadn't done – now I feel sure that I have done all I can (realistically). I have seen my students progress academically and gain confidence in themselves in greater numbers than before."*

Example Two

Other teachers were also working very hard at establishing cooperative groups. One teacher commented:

> *"Had a lesson on Friday. Involved more about cooperative group work – my class is not in set groups yet – and advance organisers. Went better with even tighter control on things in hand. I think having a clear 'message' gives more reason for them to listen and they perhaps see more easily. Group work went surprisingly well although the textbook helped – an experiment with the order of tasks mixed up (perfect). They had to discuss the experiment in groups to work out the steps. ..... For a Friday period four, I felt they were pretty much on task – although it was a bit slow to get through the work. Making them face one another – not just sitting along the bench – was definitely better. Also, groups of four were put into two by two, with suggestion they could regroup after initial discussions."*

Here, a teacher was beginning to work with cooperative groups and use advance organisers. This teacher went on to develop some very real skills in the use of advance organisers and the development of supportive frames for students to order their work around.

Meantime, the teacher was carefully thinking through the forming and functioning steps of the development of cooperative learning groups.

Example Three

The next example is of a teacher who had worked with the consultant during the 1990 pilot programme and established good skills in working cooperative groups. This teacher now turned to a fifth form class and set the following objectives: (a) to think more deeply, (b) to become more active learners, (c) to continue to improve social skills, (d) to give [an ESOL student] the opportunity to process information through speaking, (e) to improve examination results.

Following a discussion with the class during which the teacher expressed concern about whether they were displaying the depth of knowledge required to meet examination requirements, the teacher asked the class if they would like to continue to use cooperative groups. They wanted to maintain this form of class work and the teacher set out to attempt to structure the work more carefully so as to provide a stepwise framework that the students could work to. The consultant was invited to join the class.

The following commentary note was written for the teacher at the conclusion of the day:

> "[teacher] – *just a brief diary note following the lesson I sat in upon. Your comment that this was where I came in last year made me realise how far we have come!*
>
> *We discussed the work so I won't repeat myself except to say that the lesson was really a pleasure to watch. The fact that groups could switch so easily is indicative of the skill the kids have now."*

This teacher was using cooperative groups as a vehicle for increasing the degree of cognitive processing the students could bring to bear on their work and, in addition, to use graphic transformations to assist that processing activity. The combination of advance organisers, cooperative groups and graphic transformations had moved this class into a highly functional and cohesive group of people who moved rapidly to their work, who remained on task for the great majority of their time and who became more and more skilled at conflict resolution and higher order discussion of academic tasks.

As the teacher and consultant continually grappled with the constraints of time, the demands of the examination curriculum and their efforts to increase academic and collaborative skills, the exchanges became more and more focused. Weeks later the following comment was made by the consultant after reading student evaluations of their work:

> *"The lessons for us are clear:*
>
> 1. *The groups are going well. One group had some difficulty which we agree needs looking at, but even they recorded a pretty good result;*
>
> 2. *The groups are probably capable of resolving any difficulties themselves – though again the one group may need help, or reshuffling;*
>
> 3. *Resolution would come from some group processing and reflection on their group responses;*
>
> 4. *The only major problem appears to be clarity of functions. This may be fixed with some role reallocation;*

5. *It may also be necessary to set some objectives for the groups on a task by task basis so that they are more goal oriented. However, having said that, I have observed the groups working well so it isn't a major task;*

6. *There is a need to balance up the workloads of some kids – probably more an issue in the one group only. However, part of the exercise is to get kids to resolve conflicts for themselves, where there is the time to do it.*

There is a lot to be pleased about in these evaluations and some work for us still to do. Your own views and mine are also important. For what it's worth, I feel the kids are doing very well."

Four groups were involved. The results were:

GROUPS:

Did not get started	0	Did not stay on topic	0
Got started pretty soon	3	Stayed on topic to some extent	1
Got started immediately	1	Stayed on topic well	3

Everyone contributed ideas	YES 4	NO 0*
Everyone listened carefully to each other	YES 4	NO 0*
Everyone tried to help others contribute thoughts and ideas	YES 4	NO 0

Other things to do differently next time:

Comments ranged over seating by gender (boy, girl, boy, girl),defining the work pattern and distribution, listening carefully to instructions, staying together, beginning quickly, working better as a group and * everyone pulling their weight.

* qualified against one person who didn't help as well as the others did.

INDIVIDUALS:

	RATING A little ..... A lot			
	1	2	3	4
Encouraged others	1	12	3	2
Shared materials	1	1	9	8
Checked others understood the work	2	5	10	2
Willing to give and receive help	0	3	6	10
Accepted responsibility for completing work properly	1	5	8	5

Example Four

Another teacher who began using a number of the strategic approaches pretty much simultaneously started by setting out very carefully stated teaching objectives. The following is taken from a lesson plan describing an early attempt at using cooperative groups and other strategies together:

"CREDIT IN THE ECONOMY

Academic Objectives

- *students will be able to list the different types of credit available in an economy*
- *students will be able to distinguish between different forms of credit*
- *students will be able to list the types of credit households/firms use for obtaining: (a) goods, (b) cash*
- *students will be able to list the advantages versus disadvantages of credit*

Collaborative Objectives

- *students will be able to ask for help, clarification – everyone will contribute – everyone will listen to others carefully*

Method

1. *Introduction*
   - *cooperative learning task*
   - *credit in the economy*

2. – *groups to brainstorm for ideas on 'types of credit'*
   – *build up star diagram* [spider map] *on blackboard*

3. *groups to write a sentence explaining each kind*

4. *students to make up a diagram showing how households/ firms obtain credit for purchasing goods versus obtaining cash*

5. *groups to make a list of advantages and disadvantages of credit*

Groups

- *students ranked in order of exam mark*
- *groups of three made up from top-middle-bottom third – taking into account characteristics, etc*

Roles

- *writer*
- *checker for understanding*
- *encourager of participation*

Goals

- *each group will develop one set of answers (these to be photocopied and distributed to each member)*
- *each group member will contribute to the answers*
- *each group member will assist other members to understand the material*

Individual Accountability

- *frequent oral quizzing of group members picked at random"*

To accompany this lesson plan, the teacher produced a one page cooperative learning task planning sheet. This planning sheet led the students through the steps that they would need to take in order to meet the objectives that they had been set.

In the diary note the teacher refers to consultation on what might have been improved upon from the first lesson (Wednesday). The consultant's notes written on the Thursday have been reproduced below. These notes are somewhat cryptic but the reader would probably understand their meaning:

"Class got onto interest rates
Used pairs – explained why not social pairs
More able with less able
Students think it worked
Eight out of ten groups got the answer
(some groups more able to do it mutually, some groups maybe only abler one got it, some able ones taught less able ones)

NEXT TIME

Reciprocal teaching
Verbal rehearsal
Modeling
Reciprocal teaching first example
Able student does second example
Less able student does third example"

At the conclusion of the Friday lesson, the teacher took a brief individual test of student knowledge of the material that had been taught. The marks were taken in and the students went home for the weekend. This class returned to the same teacher on Monday. The teacher immediately retested them to check whether they had retained the information over the weekend. The results were shown to the consultant who wrote the following note in reply:

"[teacher] *I've just had a chance to look more closely at your economic studies results. They really are most impressive. If you look at the three groups, the bottom third still held onto the information over the weekend to an average pass level. Would you have expected that? There was no loss for the others, indeed a gain for the middle group.*

It would be interesting to retest that material in about a month to see how well it held up." [it was not possible to do this because of time pressure]

Perhaps the most interesting element of this teacher's record is the enormous care with which the lesson was set up and the cooperative groups were established. Despite the fact that none of the teachers in this programme had received formal training in the establishment and development of cooperative groups – the whole purpose of the project was to see whether a programme could be established in schools on a consultancy basis – the management of the cooperative groups was exemplary.

This teacher was later involved in using an "expert" within the group. In this section of the economic studies syllabus, some work on business accounts must be completed. Some members of the class were taking accounting as a separate subject and therefore had additional understanding of the material that would be taught. The teacher asked the students who took accounting as a separate subject to assist her with this work.

The teacher provided the experts with the following guideline sheet. The text is reproduced below, but was embellished with drawings and highlighting devices to make it more interesting:

"BUSINESS ACCOUNTS

You are going to be the experts in your groups.

By leading your group through this section of work you will:

prove your knowledge
and
improve your knowledge

It is your job to help the others in your group to:

(a) understand basic accounting terms, eg
current assets
drawings
proprietorship

(b) give your group a sentence or two explaining the following accounts:

trading account
profit and loss account
revenue statement
balance sheet

Explaining means ..... eg for a trading account

('This shows the GROSS PROFIT for a business. It shows the revenue earned from selling goods and services less the cost of those sales (ie the cost of purchasing or making stock)' "

The teacher had developed the notion that peer tutors within the class, nominated as "experts" and responsible for groups, would improve their performance as well as the performance of their group mates. Since peer tutoring was beginning to be developed by some teachers, the teacher was aware of the literature on the advantage to peer tutors of a tutoring system. The teacher established the device "prove your knowledge and improve your knowledge" as a kind of slogan for the students to help them to see that they would, indeed, improve by assisting their group mates.

A final comment on this teacher's work is warranted. In this case, the teacher was working with a half year option class at the third form. The teacher was attempting to work through a complex Inland Revenue Department tax form which needed to be understood. The teacher and the consultant had agreed on the lesson format and the consultant joined the class for the period. A second period would be needed to complete this work which, because of timetabling issues, the consultant would not be able to attend.

The lesson plan would have the teacher model the form completion. A student would then be asked to model the last part of each section.

In pairs (one group of three because of numbers) mixing a proficient with a less proficient learner, the students would work through the steps in turn. The proficient learner would do a step and talk it through, the less proficient learner would monitor the work and suggest necessary changes. They would then reverse roles.

Assessment was to be by random selection of students to read and justify their own answer. On a subsequent day, there would be partial or complete form filling to check for retention.

An interesting incident occurred during the course of this lesson.

The teacher realised that the sheer bulk of information required meant that the lesson plan had to be set aside at one point simply through the nature of the task. As any teacher will confirm, Murphy's Law operates on most days and this was no exception.

The teacher's diary response reads as follows:

> *"Thanks for observing my lesson and for your comments. I realised half way through the tax form that I wasn't quite on the right track but thought I would press on.*
>
> *There was an awful lot of information to take in but the kids appeared to be keeping up and coping.*
>
> *On Monday we continued on with the pairs etc. I ended up with two groups of three because one girl was absent. I gave one student in those groups the task of being the checker: 'Do you agree with that? ..... Do you understand it?'"*
>
> *Groups worked a little better. When the groups finished we marked their work by simply having different people answer different boxes from the tax form. Most answered their questions well (they didn't know what box they were going to be asked to answer).*
>
> *Then the test! The same information was given (as per previous examples) different figures were used.*
>
> *The results!* [the results, out of 25 (ie one mark for each question asked) were presented] *The range was 22 to 25. The mean 23.4."*

Example Five

The next example comes from a period much later in the year when a teacher taking a computer studies programme met with the consultant to discuss the use of cooperative learning in a series of options classes. This teacher had used cooperative learning in the past and, at a group meeting, had raised the question whether a third form class had had any training in cooperative group work. The following commentary written by the consultant to this teacher summarises the discussion and the decisions that were made:

> *"*[class] *Well, as we discovered at the group meeting they have indeed received some training in cooperative group work. Nice affirmation of generalisation of the training.*
>
> *You said that you didn't assign roles but one group spontaneously selected a planner and divided the work to increase efficiency. Actually, this is very important as it shows the kids are taking responsibility for their own strategies and adapting strategic behaviour to meet the needs of the situation.*

This planner would go to the board and set out a plan of action, return to the group for them to operationalise it on the keyboard, then return to the board for the next plan. The important thing is that the planner learns the operations and the operators learn the plan. In fact they must learn the process (see below). This can be achieved by insisting that the kids rotate the roles. Interdependence takes care of the learning issue for the roles.

I didn't think to ask you how the roles you set up last term might have been applied. Have you thought of that?

You said that for the whole period, and the previous one, the kids had been on task virtually the whole time. That is more than the result of previous training. The programme had to be interesting and absorbing to hold them there. You noted that even one student who rarely stays on task was totally absorbed in the work.

My understanding is that the class was in groups of two or three (there is one youngster who works alone for a number of reasons). The groups had a 15-part task to complete with operations required on paper and the keyboards. The task was cooperative within groups and competitive between groups.

We then discussed future planning. We looked at two aspects:

1. *Academic skills. We agreed that we wanted a mastery level at 80% for the academic tasks.*

   To test this there would be a continuous assessment programme every period or two periods. The test would be pencil and paper or keyboarded whichever was appropriate.

   You will randomly select one student from each group for the test. The other group members will just carry on with the exercises while the testing is done.

   I think it is very important that you keep the records of these tests available to the kids. Maybe a version of the test graph [another teacher] *is using would do the job. I say this because it is extremely motivating for the groups to have the results fed back to them and retained in their own care. This helps to make the marks personalised.*

2. *We also talked about social, collaborative skills. Since the kids are already working cooperatively we are not so much looking for before and after measures as we are developmental steps. We can do that in the following way:*

   (a) use the format we discussed

(b) *each day (say) ask the kids to fill in the forms to list their goal (first week or block of periods), how well they met their last goal and, now, what is their goal for the next period or whatever*

(c) *keep them focused on improving their collaborative skills. The goals should emerge from their actual work.*

We will need to monitor this formative development from the kids. They may be unsure of what goal to set next simply because they are not yet sophisticated enough to know how to target a collaborative skill. However, if you can point out some aspect of their work in need of development, you can direct them in that way.

OK. That brings us up to date. I look forward to seeing how things are going."

This teacher continued to work with the class on the methods outlined above. The teacher submitted a diary report on progress one month later. It read:

"We have now moved to the second part of the six week computer studies module, onto word processing using Easy Script. I have stressed to the class that the final assessment of this section will be the average achievement of group members.

Group members are now much more aware of their interdependence and are actively teaching each other the techniques. They have learned that if one person 'hogs' the keyboard then the weaker member of the group doesn't learn much. I did another random check of mastery today. This time I called a member of each group up, one at a time, and gave them a task at a spare computer. All five groups assessed in this way met the standard.

I am trying to modularise tasks more so that groups get more immediate feedback (mainly in terms of comment from me) on their success.

Today's period went very well. Every group completed the basic task and several got well beyond this.

I forgot to mention that for the last two weeks, [student] *has been incorporated into a group of two.* [another student] *did not feel enthusiastic about this but it is working well now."*

At the completion of this course, the class were examined individually. The marks of each group were averaged and the individuals then received the average for their group in the marks register. The marks were then bracketed into three grades. The grades were, 1 (11-15 out of 15), 2 (8-10 out of 15), 3 (7 and below out of 15). Eight out of nine groups rated 1, the range of marks 11 to 15 in the individual marking, 13 to 15 in the averaging. The tenth group performed well but the teacher noted that first, one student was absent for half the tuition time owing to sickness and second, the other student in the pair was the least proficient member of the class. Their scores were 11 and 9 respectively. The teacher made the following comment:

> *"Although this class is 'above average' in composition, the results are superior to what I could have expected if none of the principles of cooperative learning had been used. Based on several years experience with the same course, the able and motivated would have done well, the rest wouldn't. As these results suggest, the unmotivated have been motivated and the less able have achieved a pleasing level of mastery."*

The most interesting part of this work was the transfer of skills by the students and the way that they adapted their skills to a subject in which some find it difficult to believe cooperative learning can be implemented. The teacher's comment on the recognition by students of the importance of interdependence and the motivating influence of the cooperative learning approach are clearly apparent in this teacher's report.

Example Six

A further example on the development of cooperative groups comes from a teacher who had been responsible for the careful and methodical adaptation of the paraphrasing strategy as outlined by the Kansas University Institute of Learning Disabilities. This teacher had virtually transformed an extremely challenging third form class, hand picked for the teacher's attention. Most members of this class would constitute the least proficient of any usual unstreamed class and all of them would be termed less proficient learners within the context of the overall standard of third form attainment in New Zealand schools.

The teacher decided to move to cooperative group work and worked with the consultant on achieving this. Until this point, the consultant had worked in the teacher's classroom on other aspects of the programme.

The following is taken from a written response to the teacher after discussion on these cooperative groups. After discussing other aspects of the programme the response went on:

> *"The group work is much more complex, and, on reflection I would like to talk more about the groups.*
>
> *The starter kit* [a collection of guidelines and suggestions on cooperative learning] *and the 4F hopscotch* [taken from the work of Johnson and Johnson] *are very useful in setting things up. The forming part sets up a few skills they really must have.*

Your class discussion on roles was a very good idea. The roles you have chosen are all good ones. By choosing the groups yourself you will have better control over the situation.

The working of groups though, as cooperative groups, is much more complex than the more common group activities. Remember that in regular groups the individual prevails even though they are sharing materials and goals. In the finish you are only responsible for yourself!

In cooperative groups the kids have to get the hang of being responsible for all the members and that really does take a different orientation. It is worth concentrating on the notion of 'all for one and one for all'.

The team building exercise is a good idea. A simple task that can be used is the rectangles you saw used with the parents [referring to a parent meeting on the subject]. *But you can just as easily set a curriculum related task. The lessons to draw out of the exercise are:*

1. *everyone should participate*
2. *everyone should learn the required amount*
3. *everyone can represent the group with an answer*
4. *to ensure that, everyone signs the answer produced by the group to signify that they can represent it*
5. *the group hasn't finished until all are satisfied that the group members can, indeed, answer on the group's behalf"*

Two weeks later, the following formed part of a comment to the teacher:

"Second, [class] *on Friday. I thought it went really well. When you think how little time it took the kids to realise that the groups were places where they could feel comfortable about asking for help, you realise something else was going right. I have been thinking about it and I wonder if it is the trust the kids have built up over the way you are working with them.*

In effect, that class came together on the task with real purpose. I look forward to the work with them next Wednesday.

Finally, the fourth form group. This was a delight. The kids responded quickly and well. In terms of processing, there are some things which could be worked out quite readily:

1. *The goal structure – cooperative, positive interdependence and individual accountability could be reviewed with them to ensure they understand. This is being developed in all the groups in various ways, eg in* [third form challenging class] *with the two kids having to come to the front and report; with the fifth form classes having to keep that 10%* [a reference to an activity going on in the fifth form class]. *In other words, there are subtle and unsubtle ways of getting it – you can spell it out and actively look for it or you build it into the requirements and watch for it. By our actions they judge us – if we really want it we shall do things that get it, if we don't, the kids soon realise that we only said we wanted it, we weren't serious. The only caveat is that the kids must know how to accomplish it – that might be worth remembering for the fifth form group;*

2. *The roles might be made more explicit and be followed up more in the small group interventions and processing. The checker is the one I have most in mind;*

3. *The ratings for contributing were pretty realistic. However that is something that needs to be followed up quite consistently or they will lapse into low levels of challenge and accomplish them well. What we really want them to do is to become thinkers – to really enquire of themselves and challenge each other's and their group conclusions to test them to the hilt. They need to do this and, to do it with skill and collaborative good will. To do so is challenging in itself. So we should look to see them setting their sights ever higher in the things they see as goals for the next period;*

4. *Which brings me to their goals. Two that I checked were realistic and thoughtful so all is well so far."*

Example Seven

One teacher carried out a cooperative examination. The consultant sat in for the first hour of this two hour programme which involved both theoretical and practical activities. The students had their marks taken on the basis of the group's activity and they entered into it with a will. The following extract is taken from the response sheet to the teacher:

> "[teacher] *It was a real pleasure to join in with your class this week. I thought the kids rose well to the occasion of a cooperative exam and I was only sorry I couldn't stay the full two hours.*

I found the groups appeared to work very well, once they settled to the demands of the task. On only two occasions did I see any hitchhiking behaviour. I suspect that can occur when the kids don't have a role person ensuring the pair or bigger group all contribute – the task probably takes over. ..... I found that where the participation levels were about equal, the group appeared to be more uniformly motivated."

This was an extremely interesting experience. Although the exam mark did not form a major part of the class final evaluation, it was an important event both for the teacher, the students and the consultant.

ADVANCE ORGANISERS

The advance organiser strategy which was used by a number of teachers derived from the work at the Kansas University Institute for Learning Disabilities. Across the period of the pilot programme in 1990 and during this project activity, advance organisers were adapted slightly from the model set out by Lenz and others, though it remained in easily recognisable form. The data reported elsewhere in this report show that advance organisers were used by a large number of teachers and with some degree of intensity.

Example One

One teacher in particular was interested in how the students reacted to the use of advance organisers and how they could be alerted carefully to the organiser as an orienting strategy.

This teacher had been using organisers effectively during the pilot programme and in the first term of 1991. Like many colleagues, the teacher began the use of organisers hesitantly, putting a lot of time into constructing carefully written organisers which would then be delivered almost "formally" to the class. The consultant had sat in on the delivery of a number of advance organisers and was well aware of the growing skill with which teachers "naturalised" their delivery to the point where the advance organiser flowed easily from the introductory welcome to the class through into lesson delivery.

The teacher and the consultant collaborated on the development of a measure of student recognition of advance organisers. The intention was to trace the use of the organiser through student listening and perhaps, in that way, ensure that the orienting quality of the organiser was accomplished.

The measure was a simple questionnaire (a copy will be found in the appendices). Students were measured on the questionnaire to establish the levels at which they recognised what was happening in the delivery of the organiser and how it might relate to elements of lesson preparation, lesson delivery and the organisation and management of the lesson time. The teacher reported the following in the diary notes:

"The results of the advance organiser pretest were most encouraging to me. It indicates that they are beginning to pick up on what's happening. I hope to 'teach' advance organisers tomorrow. I emphasised to the kids that this was not a 'right/wrong' test; that it was important that they answer according to what happens for them."

The teacher was pleased with the results because she had been using advance organisers on a regular basis with a class made up almost entirely of less proficient learners. By formally teaching the class to use the organisers, there was a change in student behaviour in the desired direction. Since a number of the students had already become aware of what they should be attending to and how the organisers were delivered, this change was probably less dramatic than it might otherwise have been. The results were compared with those from a class where both the teacher and students were new to this strategy. The differences indicated the high probability of changes in student orienting behaviours when advance organisers are used. Details of this work will be found in the appendices.

Advance organisers were picked up by a number of other teachers. A teacher at the other school submitted a diary note following an exchange visit where teachers could observe colleagues at each other's school demonstrating their work on developing strategic classroom environments. This teacher commented about the class as follows:

"Very impressed by [teacher] *classes. Extremely well organised – used advance organisers and cooperative techniques rigorously. Also made good use of* [graphic] *transformations. Liked the use of advance organiser checklist by class to keep them focused and concentrating.* [the teacher went on to comment on aspects of the classroom work in favourable terms] ..... *A 'businesslike' but warm atmosphere in both classes."*

The validity of another teacher's comment carries more weight than anything the author can offer. A number of teachers had picked up the use of the questionnaire to check the level of use students were making of advance organisers or as a check on whether students in their rooms had a view on how they were expected to pick up information in the course of a lesson.

Example Two

This same teacher who worked so effectively with advance organisers raised the issue with the consultant of their frequency of use and ways in which they could be used to orient students across a longer period of time to capture a unit of work rather than just the individual lesson. In discussion between the consultant and the teacher, it was agreed that the effort to "throw a conceptual net" over whole topics as well as individual lessons needed to be considered.

What emerged was the concept of "macro-organisers" and "micro-organisers". The teacher and consultant were already familiar with what had been definied as micro-organisers since these were the conventional advance organisers found in the literature.

These macro-organisers followed the same pattern as the usual advance organiser. To illustrate the difference, the "topic" section of the organiser is contrasted. The teacher offered the following topic statements:

1. macro-organiser topic: "For the next three to four weeks we will be looking at paragraphing. Paragraphs are a way of organising our ideas when we write, in the same kind of ways as chapters are organised in a book and scenes in a play."

2. micro-organiser topic: "The topic for this lesson is 'sentences' and we will analyse them."

This style was carried through so that macro-organisers were presented whenever a new unit of work was begun or whenever some element of the unit formed a sufficient collection of ideas or would bring together a sufficient number of lessons to justify a further macro-organiser. Micro-organisers could continue to be used at each lesson, sometimes reduced to a kind of "bare bones" organiser – though they were invariably carefully constructed.

Example Three

Another teacher was thinking through the issue of the use of organisers in science classrooms. In June this teacher started to try to build what was called a "generic organiser". The idea was that by the use of an overhead projector or a simple handout the teacher could have students attending to the organiser while the teacher outlined the steps. A rough outline of this approach was written up in diary form toward the end of June using an example where cooperative learning was to be used in the science room. Thus, the advance organiser included details of how the role allocation and assessment system would work. The complexity of capturing this information in as simple an advance organiser as possible led the teacher to reflect on how it could be effected more readily.

In a response to the teacher, following a classroom observation, the consultant had this to say – taken from a more comprehensive response:

> *"First of all, looking through your notes, I thought the generic organiser you prepared was a very useful one. As I said to you, your delivery of the organiser was very smooth and inclusive of all the elements. My own observation was that all but two students, with whom you dealt later, paid close attention with one youngster quietening a classmate to be sure of hearing it."*

In a diary note of early November, an "Advance Organiser – Summary" was included. This simple format which the teacher devised was computerised and easily coped with any variations. For the students, there was a standard format which could be distributed or displayed, and for the teacher there was a quick and ready means of constructing the organiser.

Example Four

One teacher in whose English classes the consultant often worked and observed had an extremely smooth presentation using the whiteboard. Nonetheless, this teacher's diary notes regularly showed a nine or ten point organiser noted down. Since the standard advance organiser used by the teams involved in the project contained nine central points, it was interesting to see this teacher including a tenth on some occasions. This additional point was intended to effect the same understanding that the macro-organiser achieved (see above). Here, the teacher was indicating a time span over which the particular topic would run so that students could orient themselves and, again, throw a "conceptual net" over the work.

This important element of students recognising the scope of the task and being able to incorporate this understanding into their group work was regarded as an important element in encouraging students to be autonomous and self managing.

Teachers at both schools became highly adept at constructing and delivering advance organisers. Whether they were delivered orally, by overhead projector, by photocopied sheet or by a variety of whiteboard presentations, the advance organiser became a standard element in the practice of many teachers.

GRAPHIC TRANSFORMATIONS

A number of teachers took up the use of graphic transformations in order to assist their students to undertake active cognitive processing of learning material. Whether this material came from their textbooks, from whiteboard presentations, oral didactic lessons or other forms, many teachers could see the need to activate their students to encode, store and retrieve the material. Following upon the work of Jones and her associates, these teachers worked with the consultant to develop ways in which they could introduce graphic transformations to their classrooms.

Like all of the strategies, there was a good deal of trial and error in moving to this work. In many cases, cooperative group activities were used as a vehicle for ensuring that the transformations were carried through. In other cases, the students worked as individuals but were encouraged to use appropriate transformations to the individual task.

One of the first things the teachers had to do was to decide how the transformations could be fitted to their teaching material. The use of spider maps in particular became very frequent. There are examples elsewhere in this report of teachers personally modelling the use of spider maps, assisting students to develop appropriate spider maps for their examination preparation and, in one case, a teacher who worked very hard to develop what began to be described as RAP and MAP.

RAP and MAP was a mixture of the paraphrasing strategy developed by the Kansas University Institute for Learning Disabilities and the spider maps developed by Jones and her associates. Students were trained to "RAP" the text material that they were studying. Once they had paraphrased this material they were taught how to convert it to spider maps using a "macro MAP" for their overall topic and "micro MAPs" for individual sections. The RAP and MAP approach could be introduced once students had learned paraphrasing skills. This development is dealt with elsewhere in this section.

Besides the spider maps, compare/contrast matrices, series of events charts and human interaction charts were used. One teacher worked closely on the development of concept charts which is a little different from the graphic transformations (and again came from the Kansas University programmes) but was used in a fashion not unlike that of the graphic transformations. Some students took to these approaches very quickly, others were not so quick to pick them up. There were a number of reasons for this.

Some examples of the use of graphic transformations will help to explain their use.

Example One

The first example is of a teacher who was attempting to improve the short paragraph writing skills of an examination class. The teacher pointed out that the students were often required to write short, concise and accurate paragraphs on matters to do with the subject. Students often had difficulty extracting useful information from the text material, encoding it and producing appropriate paragraphs under examination conditions.

The teacher chose to use a compare/contrast matrix and work through cooperative groups. Students were required to use their own and other printed material available to them to complete a compare/contrast chart on a number of variables for the topic. Following this exercise, the matrices were handed in to the teacher by the recorder for each group.

Before the next period, the teacher checked each matrix, made suggestions for improvement if the matrix was not complete or sufficient, or otherwise approved the matrix for the next part of the work.

At the subsequent period, students, still working in their groups, either completed their matrix and then began the next phase of the task, or moved straight to this phase if their matrix had been approved. This task required them to construct appropriate paragraphs using only the material on the matrix.

In this way the teacher was able to build increasingly concise and accurate paragraphs, modeled in the cooperative groups and then produced individually either for homework or in a subsequent period.

Considerable detail on the criteria for assessment and the form of grading was available to the students.

An interesting element of this example is that the teacher, who had already taught the use of spider maps, used a rather elaborate spider map to illustrate the development of a series of paragraphs with the central element of the text at the centre of the web.

Example Two

Another example of a teacher using a variety of strategies is illustrated in that teacher's diary note which reads as follows:

> *"Form six exams. A mixed bag. Stories for which we'd used transformations, especially flow charts, compare/contrast matrices and spider maps were well understood and quite well remembered by the students. Many of the less able students did not make the conversion back out of note form, possibly the fault of the examination for making the assumption that everyone would remember to write literary essays for answers to literary questions and not specifically reminding them to do so. The better students did write these essays, some very capably."*

This teacher went on to make a comment about the assistance given to less proficient learners by the transformation structures themselves. The comment went on:

> *"For many of the students, prolonged writing is a major effort. Being able to use some visual means of commentary on what they have learned seems to give them more confidence and a willingness to tackle projects which many would have shrunk from if it had been all written work. The group did a shaping exercise to illustrate some aspects of the novel and this produced several interesting, thoughtful creations which they were asked to explain to the class. It was good for the group as a whole to see what individuals had done and a learning exercise (also a source of inspiration and imitation for the tardy ones)."*

This comment illustrates not only the advantage to less proficient learners that the graphic transformations can offer but an interesting comment from the teacher on the modelling effect which learners can offer their less proficient classmates. This same teacher had previously demonstrated a modeling exercise using spider maps. In a stepwise procedure the teacher had:

1. modelled the use of a spider map on one character in a novel;

2. given a partially completed spider map for the groups to do;

3. set a homework exercise for each student to do a spider map for another character.

Example Three

Writing in a diary the teacher reported that for examination preparation the class had been taught the use of spider maps as a way of using them as "retrieval triggers" for the examination questions. This teacher pointed out that only one student had completed a spider map for each of the three questions and that student received maximum marks. In order to confirm this marking the teacher asked the head of department to do a "blind" marking of the script. The HOD gave the student the maximum mark.

The effect of this when explained to the rest of the class was to see a number of other students decide to use the spider map method as a retrieval trigger in further examinations.

Example Four

Another example of the use of transformations comes from a teacher who had begun to use graphic transformations to get a better understanding of complex literature. The teacher's diary reads:

> *"Students were allowed to use their grid on a character to answer questions if they wished. All students were able to write at length on 'an interesting character was .....'. They were able to focus on what made the character interesting and give evidence, including quotations to support their answer.*
>
> *A number still lack good organisation, cohesion, but at least they were getting the information down. Nobody scored less than 60%."*

This teacher went on to record in the diary note conversations overheard in one of the cooperative groups. They went like this:

> *"First person – where does it say that?*
> *Second person – no ... but look ... here it says ...*
> *Third person – I don't agree because ...*
> *Fourth person – it depends on what you mean by ..."*

The teacher was illustrating the greater depth of discussion, understanding and cognitive processing that working to a structured format, with the vehicle being cooperative groups, enabled for the students.

This teacher later went on to use a complex human interaction analysis chart to illustrate with the students the initial and concluding events in an interaction between two central characters. The play was "Twelve Angry Men" and the scene was an interaction between a liberal and a conservative juror in the play. The teacher was able to draw out through the interaction analysis chart, exactly how each juror affected the other. Then, by inviting the students to refer to subsequent passages in the play, it was possible to show how the interaction that was so carefully scrutinised, appeared to influence the behaviour of the jurors at a much later stage in the proceedings.

PARAPHRASING

The combination of the paraphrasing strategy with the use of graphic transformations to form RAP and MAP has been noted above. The paraphrasing strategy was first begun by one teacher during the 1990 programme. Attempting to translate the paraphrasing strategy into whole class activity was a complex and time consuming affair.

In its original form, the paraphrasing strategy was designed by the Kansas University Institute for Learning Disabilities as a highly structured device for use in withdrawal classes (what the Americans call "pull out" classes). The consultant attended a summer school training programme in the use of strategies developed at the Kansas University Institute and particularly sought guidance and advice on the use of the paraphrasing strategy. It was realised that the translation of this strategy into a regular secondary classroom would not be easy since the structure of the programme is detailed and as the team at Kansas University Institute quite correctly pointed out, there are no shortcuts to the development of skill in paraphrasing.

For this reason, careful attention was paid to the implementation of the strategy in its original form. Strenuous efforts were made to carry out such procedures as tape recording of student responses and the careful, meticulous scoring of those responses according to the criteria established in the original programme.

It soon became apparent that some form of modification to the programme would be necessary. The first attempt to deal with the complexities of using the programme in a regular classroom was to use senior students as peer tutors. These students assisted the pairs of less proficient learners in recording their efforts at paraphrasing and ensuring the pairs remained on task throughout the activity.

While this approach was relatively successful, it was not possible to sustain such an intensive programme on a regular basis, particularly when it was decided that the whole class should attempt the programme. For this reason, cooperative learning groups were used. The groups ranged in size from two to four and students were taught how to record each other's efforts at paraphrasing. By using a participation checker and the organiser roles, it was possible to maintain on task behaviour at high levels.

A small number of teachers attempted the paraphrasing programme and two examples of this work are detailed below.

Example One

In the first example, one teacher, whose work has already been noted for the combination of RAP and MAP and who was working with a streamed class of less proficient learners, set out to establish paraphrasing as a generic skill across the class.

This teacher began the paraphrasing programme as soon as the project was started. Each week, the consultant would have prepared in advance sufficient paragraphs arranged in a fashion which would lend themselves to the paraphrasing strategy. The students would work

on the paragraphs in their groups and jigsaw the results into a cohesive statement. This required each set of text material to be prepared at an appropriate reading age and level of interest which would maintain motivation for the class. An early response note from the consultant reads:

> *"The paraphrasing is extremely well organised and complex. The exercise was done as a class with a paragraph by paragraph approach using pairs. The class is well organised and self disciplined so that it went very smoothly."*

One month later the following note was recorded:

> "[teacher] *is making real progress with advance organisers and with paraphrasing. I spent a period in the class and found the standard of work really has improved (see the examination results)."*

After a further month these comments were made:

> *"First of all, it was interesting that some of the kids had generalised RAP to the library research. The fact that you reminded the others is very important."*

Within the same month the teacher, in commenting on a range of strategies, included this remark:

> *"Paraphrasing went very well today (paragraphs 2/3) 'greenhouse effects'. The kids feel they are getting better."*

A pre and post test was taken of their knowledge and understanding of some of their class work. Since, wherever possible, measures were taken of their subject domain activities rather than the paraphrasing exercises they were being asked to do, these measures are probably a reasonable indication of the generalisation of the paraphrasing skill to their work.

The pre and post test results showed that students were able to double their pre test scores on a social studies exercise. This meant that more than half the class scored a pass mark, an unusual occurrence for this group of less proficient learners.

A test of actual paraphrasing skill was also carried out towards the end of the programme. At the beginning of the programme, the students were unable to paraphrase accurately and with only a couple of exceptions were unable to meet the scoring criteria set down for the paraphrasing strategy and modified for use in regular classrooms.

These modifications were minor in the sense that the original scoring procedures as set out below were retained. These were that:

1. The student response must be a complete thought

2. The response must contain accurate information

3. The response must contain new information for which credit has not already been given

4. The response must make sense within the context of the statements previously made

5. The response must contain useful information for comprehending and remembering the content of the paragraph

6. The responses must contain a main idea and further details. Two details would be scored.

7. The response is substantially in the students' own words – technical terms were permitted.

Two measures were taken of students' skills in paraphrasing with a maximum score of eight available. This means that two paragraphs were given in each of the test items, two points were scored for the main idea (meeting criterion) and one each to a total of two points were given for the detail statements (again meeting the criteria noted above).

The scores obtained by the students on the first test yielded a mean score of 5.8. On the second test the mean score was 6.6. Converted to percentages, these give scores of 72.5% and 82.5% respectively.

The teacher reported anecdotal evidence that other teachers who took this class had noted an increased ability for the students to cope with subject domain reading material. One teacher had reported that when the class was instructed to read some pages of the set textbook for the class, one student had asked if the class was expected to RAP it. Since this teacher was unaware of the RAP programme she had to seek assistance from the teacher who was running the programme to find out exactly what she should be doing to ensure the students were getting the right kind of help in generalising the skill.

As a matter of interest (the data are reported elsewhere) this class joined with the teacher in preparing a survey of their views on the work they had done across the year. They decided to rate their programme on a continuum of one to five, with five being the top score. One of the items they chose to put in was the paraphrasing strategy instruction. When the results were analysed, the paraphrasing programme received a score of 4.1 or 83% when rounded up. This was the second highest score achieved across the seven items the students nominated for their survey.

Example Two

A second example of the use of paraphrasing comes from a teacher who was attempting to encourage students to paraphrase more carefully. This teacher had expressed considerable concern about the amount of copying from resource material straight into essays and research reports. In an effort to combat this, students had been set a requirement that no more than 10% of their written work could be copied directly from texts and this material must be within quotation marks and the author cited. To some extent this caused a certain amount of confusion among the students since, as one noted, they had not been taught how to do this in more junior classes.

Consequently, the teacher was interested to see whether in history and social studies classes students could be taught to paraphrase more effectively. Again, the teacher quickly realised that the use of tape recorders and the like would not be an effective way of dealing with this work in the regular classroom. As a consequence, the teacher elected to use cooperative groups and followed this up with individual work.

The students were instructed in the broad outlines of the paraphrasing strategy and given practice in how to carry it through. The cooperative groups were then asked to identify main ideas and details in a grade appropriate article on current events in the USSR. This was followed up with homework where the students had to find an article on their current activities and to paraphrase it for the teacher to review and comment upon. The teacher described the outcome of this as *"the results were very encouraging as was the student response"*.

An interesting element of this diary note was the inclusion of a number of the third formers' personal views on how the programme had helped them. A sample of these follows:

> *"The RAP method helped me bring out the main ideas of the article. I used to just write about everything that wasn't very important."*
>
> *"The RAP method has helped me to understand what I have written and understanding what I have to write about. RAP has been really effective for me and helps me concentrate on what I have to write."*
>
> *"The RAP method helped me a lot to understand the article. It was a bit difficult at first, I had to read a paragraph a few times and it helped to sum up the paragraph. So I thought it was a good method of reading and writing a paragraph."*
>
> *"The RAP method helped me make my final paragraph much more interesting. It gives the main points and leaves out all the unnecessary bits. Although it takes a little longer you end up with a much better product. This method also helps me unconsciously remember the ideas this article put across."* [The teacher commented at the bottom of this response *"a very capable student – she was also positive about the technique"*.]

"RAP has made me think of what I'm going to write and is making me read through it instead of copying out of a book and I think it works." [The teacher commented *"a weak student – his written summary was excellent"*.]

"The RAP method is a good way of finding facts because in the paragraphs you read it and find the most important facts and so you get the main benefit out of your article. The RAP method is much better than how I used to find information and write it."

The teachers who worked with paraphrasing in some detail did not find it easy. The translation of this activity to regular classroom work, where teachers are closely engaged with subject domain material, took a lot of time and a great deal of thought and effort.

The student commentaries noted above and the results obtained by the less proficient learners are as much a tribute to the dedication and determination of the teachers as they are to the efforts of the students.

SPELLING STRATEGIES

Some teachers were concerned to find ways to teach spelling to their students. There is a growing concern among secondary teachers that students have difficulty with spelling, and at third form level, particularly with classes where there are a number of less proficient learners, some efforts are made to introduce spelling programmes.

At one school a class had been selected for the teacher comprised almost exclusively of less proficient learners. At the other school a group of students experiencing very real learning difficulties came together under the options programme available to third formers. The teachers of both these classes were interested in pursuing a spelling programme.

This programme was based around the Arvidson spelling levels and offered a structured, over learning programme which involved an element of self monitoring. Students drew the words for their weekly spelling lists from their written work during the week. Wherever a word was misspelt in their work, teachers would note the fact and the students would enter the word into a list for their learning strategy programme. Maximum numbers of words were set for each student (typically it was 20 words). Where students fell short of this list, they would add words from a preselected list which had been drawn from words misspelt in a pretest when establishing the level for their work. In the regular low stream class, this programme ran for the full two terms. In the options class, it ran for only a few months. It should be noted that both classes were working on other strategies as well so that spelling was only a small part of their activities.

In the case of the regular class, a baseline measure was taken when the students were allocated their words and given a learning programme of a conventional kind. This required them to practice the words, but without the strategy approach being introduced. The mean score over three weeks using this conventional learning approach was 15.9. The mean score across the strategy programme period was 17.6. This mean was affected by one occasion where the scores dropped to 15.5. At no other time did the scores go below 16.8, and they exceeded 18 on approximately half the occasions.

In the options class, the same programme was introduced but with a group of students who had little or no experience of learning strategies and with few self monitoring skills. These students had been self selected into the options class but it would be fair to say that their teachers and parents had all assisted with this selection. The spelling programme ran a shorter time and the maximum number of words taken by any student was 15. After five weeks on the programme, the mean score, which had remained steady at 11.2, dropped to 9.6. The teacher working this programme reported:

> *"Results so far have not been impressive with the exception of* [student] *who has scored 100% consistently. On Monday I spoke with everyone individually and put a reminder note in their log books that spelling should be practised each night. I commented to the class as a whole that results in their weekly tests suggest that many are not putting in the required work, and that not all are following the learning technique they have been taught. I reminded them of the goals which they set at the beginning in which 'improved spelling' featured highly. Perhaps at this stage another levels test could be administered to see if any progress is being made and to see if the amount of class time being spent on spelling is warranted."*

In a note which followed a discussion two weeks later, there is a comment:

> *"The spelling programme has been corrected. Now all students are tested on day one and the programme has been tightened up. Now getting a better result.* [student] *has now gone past level eight. He is now off the programme."*

At the conclusion of the programme the teachers working with this group of students checked their progress on the Arvidson levels. Not all students in the options class had been involved in the spelling programme, but of those who were six improved their scores, three remained on the same level and one dropped by two levels. The reason why one student should drop so badly on the test is not clear. This student's average weekly score out of 15, though, at 10.5 was in the bottom four out of the 11.

It is very clear that any attempt to improve spelling skills among less proficient third formers while working in the general subject domain area is not easy. Some improvement was gained and in discussion with the teachers there was a feeling that if greater attention was paid to such basic skills on a regular and continuous basis, the task might not be so difficult.

FLASHCARDS

During the course of the programme, a number of occasions arose where teachers were concerned that students were required to learn a lot of information which they had to commit to memory. Examples included definitions in economic studies, accountancy and fifth form English certificate, and in memorisation of the periodic table in science and certain formulae in mathematics.

For this reason, a programme using an operant overlearning method was introduced. This was dubbed "flashcards" since it required the use of flashcards for students working in pairs, or at home with their families.

Some very good results were achieved with routine learning tasks. The students were given precise instructions on how to use them. The instructions included model wording to ensure that no negative statements were ever made. When groups of students wanted to take their cards home, one of the teachers sent a letter to all parents explaining what was happening and advising them on the methodology. By placing the accent only on positive statements or neutral rephrasing of the question leading to a repetition of the request for an answer, almost all negative comments were eliminated (in many classes they were not heard at all by the teachers working the programme) and the number of positive statements given to students was very frequent.

The results obtained from the use of flashcards were very satisfying. One teacher had her class establish the number of technical references they would be expected to know in their final examination. For one section of their work this amounted to 43. Having set a criterion of 70% for mastery, the students were confronted with 30 of these definitions in their term test. The teacher's log read:

> *"All students scored 22 out of 30 or higher* [this meets criterion]. *One student scored 29 and another 30. They were proud of themselves and I got them all to put a mention in their log books which I signed and commented on (to their parents). So – all in all, a success!"*

Not all students took willingly to the use of flashcards, though the vast majority did. The following extract is taken from a teacher's diary:

> *"One situation that has arisen – two students came to me feeling concerned about the flashcards. They felt they were 'childish' because of their repetitive nature and they'd seen them at junior level (primary school).*
>
> *I acknowledged their concern and explained again why I was using them – which they agreed had merit and tested their present level of understanding of the terms. What we agreed was this – in the future I would test them while the others were using their cards and for those they got wrong, they would use their 'own' method to learn them."*

This flexible response on the part of the teacher was typical of the way teachers were willing to include students in the planning of the developing strategic environment in their classrooms.

However, it was unusual for students to object to the use of flashcards, particularly once they had seen their advantage. In fact, in one school it became something of a school joke that students would walk up to each other in the playground, whip a card out of their pocket and hold it up to the other student saying "what is the definition of this word?".

One teacher obtained extremely high results, having set a mastery criterion of 80% for the students to learn a wide range of economics definitions. In order to check on progress, this teacher took two spot checks on consecutive weeks toward the end of the programme. The results obtained were 88% and 89% correct responses respectively.

These kinds of results were replicated across most classes using the strategy. Flashcards were accepted by students at all levels, in most cases. Students made up their own cards, they had pair partners with whom to work in the classroom and the sessions were kept extremely short and highly concentrated. Given the quite outstanding success some students achieved in committing the information to long term memory and being able to retrieve it so easily, perhaps it is no surprise that students found the flashcards acceptable.

SUPPORT FRAMES

As the programme progressed, a number of teachers found ways of their own to develop relatively simple and straightforward support structures for their less proficient learners – and indeed in many cases for the whole class. The graphic transformations had been seen by teachers as offering not only an opportunity to encode, store and retrieve information, they had also realised the advantage to less proficient learners of having a framework or "frame" on which to structure their thinking and revision.

Some teachers began to adapt this approach to provide their students with additional supporting frameworks. One example was the advance organiser tracing sheet which allowed students to follow the advance organiser visually, as well as aurally. Other teachers used the advance organiser in a consistent manner on the whiteboard and referred back to it often through the course of their lesson presentations.

Another teacher set up a standardised advanced organiser presentation sheet which has been discussed elsewhere in this report. This teacher was also interested in ways in which students could be helped to construct experimental reports. This work began with what the teacher described as "an experiment transformation". The object of this worksheet was to assist students, again, to throw a conceptual net over the work they were doing. By gaining a fuller understanding from the beginning, it was considered that students would have a better cognitive understanding of the processes they were engaged upon.

From this transformation sheet there emerged an "experiments framework" sheet. This sheet was designed to develop greater independence among students who previously would have become lost in the detail of the work or would have relied too heavily upon their group mates, and of course, as any teacher realises, many of the bottom third of the mixed ability classroom would "check out" of the lesson rather than attempt to cope with the complexities they encountered.

Another advantage of the frame was that it was an excellent method for the teacher to check student progress. Whether completed by cooperative groups or individuals, the frame was a permanent record of the students' attempts to grapple with the experimental material.

PRE AND POST TEST MOTIVATIONAL MEASURES

A number of teachers took up the opportunity to look at pre and post testing as a strategic teaching approach. A subset of this approach was the strategic use of test measures where students had already learned the material to one level and were then enabled to improve their performance still further through their cooperative group work. Some of these activities have been described already. At times this reteaching approach was used as a deliberate strategy to increase performance. On other occasions, reteaching was used when a teacher found the performance of the students had not reached a satisfactory level and set out to improve that level of performance before moving on.

This reteaching approach contrasted markedly with the previous approach these teachers had adopted. Then, teachers had frequently used traditional revision programmes where material was raised again some weeks or months later to be reviewed, perhaps prior to a test or examination. In the programme work, teachers were getting ahead, so to speak, of the need for revision by using a test-retest approach.

Toward the end of the programme, some teachers were beginning to look at pre and post testing as a possible way of motivating students. (Indeed, two teachers in particular, involving other colleagues, established a programme for 1992 which would involve systematic pre and post testing of subject material.)

Some teachers mixed the pre and post testing strategy with the test-retest strategy, so that it was sometimes difficult to separate the two strategies. Nonetheless, examples below indicate the use of these two approaches when they were taken separately.

Example One

The first example illustrates some of the difficulties teachers had as they began to look at pre and post testing. To begin with, the teacher who worked very closely on this programme on science attempted to match the pre test/post test to teaching objectives. Here, the teacher was already using advance organisers and cooperative groups so that the next step was seen as defining outcomes in advance, identifying the entry behaviours of students and teaching to perceived gaps.

A somewhat startling observation was that the entry behaviour of students, on average, to individual science topics ranged from 20% to 60% correct answers before the topic was taught. The amount of gain that the teacher could achieve across such a range of entry behaviours is difficult to assess since there were no base line data on this phenomenon. Two examples, however, of progress made and the advances made by the lowest achieving third of the class on each of the topics are given below. It should be noted that the percentages are taken from the raw data, not scaled marks which would be more typical of a form common test.

In the first case, the topic was genetics. The mean score on entry was 32.6%, the post test score was 55%. The mean gain for the class was 22.4%. The least proficient third of the class had an average gain of 25%. In the second case, the subject was forces and the entry score was 53.5%. The post test score was 73.3% showing a mean gain for the class of 19.5%. The lowest achieving third improved their scores by 13%.

Example Two

Another teacher using this approach took an entry test on poetry and obtained a score of 28%. Using cooperative group work to deal with the material a post test result showed an improvement to 58%. While these gains were encouraging, neither the teacher nor the consultant were satisfied that students were achieving all that they could. Apart from the fact that teachers began planning a more thorough going pre test/post test programme for 1992, some of the teachers also began looking at using a test-reteach-retest approach, as this teacher did.

Example Three

One of the teachers, adopting this approach, obtained a post teaching test result of 49.2%. The teacher then moved the class to a reteaching approach using cooperative groups. Following one period of work on this activity where the students had to rework the material in an attempt to improve their performance, a further test was taken, yielding a result of 68.3%.

Example Four

Another teacher, working in an economic studies programme, obtained a score of 50% exactly on a post test following a teaching programme. The students were formed into cooperative groups to review the material and yielded a result of 74%. A subsequent test yielded a mean score of 77%. Students scoring less than 40% were separated out and their marks checked to identify the gains they made. The average gain was a further 41% on their original score.

Example Five

In an accounting class a similar result was obtained. Here, the teacher used pairs as a means of assessment. Each pair took the test jointly and their marks were allocated on that basis. The first test yielded a score of 48% on average. A second test was given following work by the pairs to attempt to improve their performance. The scores obtained on this test were 62%. Finally, the teacher gave a new test on an individual basis. The mean score was 89%.

In each of these examples, and those identified earlier in this report, the teachers were attempting to motivate the students and to encourage greater self monitoring behaviour by keeping them informed of their progress.

Earlier in this report the use of progress charts was noted where students were able to keep their own individual progress charts as a motivational and self monitoring programme. In this case, the students were encouraged to share the responsibility for improving performance and become part of a team with the teacher, monitoring their work as they went.

Example Six

An example of such an approach can be found in a maths class. This class has already been referred to, a third form class of less proficient learners.

The maths teacher was concerned that student levels of performance were low and their lack of attention to detail was seriously inhibiting their opportunities to do any better.

A decision was made to attempt to establish a strategic environment within the room. The class would work in cooperative groups using skills already developed in some of their other subjects.

A base line measure of student achievement was taken as the common test immediately prior to the establishment of the strategic environment in the room and the average of topic tests taken to date. Each topic was then taught strategically and the topic test results shared with the class.

To acquaint the students with the test approach, period by period the lesson was divided into brief pair assessments. Thus, perhaps two or three times in any one period, the students would take stock of how much they had learned and understood before the lesson restarted.

Until the strategic programme was established, the topic tests for the class had shown an average result of 50%. This was in excess of the baseline common test score of 34% and reflected the difference between class tests and common tests. The following table indicates the unscaled results of the tests.

TABLE 7

Mathematics Class – Pre And Post Strategic Environment Scores

Topic	Pre Programme Results %	Programme Results %
Common test (1)	34	
Average topic results	50	
Polygons		65
Circles		81
Equations		88
Rectangles		83
Circumference		78
Area of circles		76
Cuboids (volume)		80
Relations		77
Sets		70
Common test (2)		47

The class teacher commented that the improvement in the mean score at the common test was difficult to interpret since the entire third form also improved. The teacher went on to point out:

> *"The idea, for a lower band class, of pretesting, followed immediately by a very similar test paper also worked well. Group activities did work well. A maths trail I did with* [this class] *and* [another class identified as a top band class] *was much more successful with* [the class of less proficient learners]. *All groups worked well and produced complete work sheets.* [the other class] *had some students who refused to work cooperatively and some groups produced a minimum of work."*

The improvement in the class tests (which were monitored and checked by the head of department) and the improved work skills as evidenced by the maths trail activity, gave valuable information on how to develop strategic classrooms.

EXAMPLES OF STUDENT PROGRESS

While the purpose of any staff development programme has ultimately to result in improved classroom performance by the students, energies in this programme centred upon ways of introducing proven or formatively developing programmes to improve the teaching/learning strategies of people involved in the learning exercise. Each week as teachers wrote up diary sheets, joined the consultant in one to one discussion or worked with each other in the weekly group meetings, progress by the students was discussed.

This was not an experimental study. Most teachers, as well as the consultant, did not believe it appropriate at this stage of skills or knowledge to enter into the establishment of rigorous experimental designs. The results for students as they emerged had to be interpreted in the light of past experience, expectations based upon the ways students had responded prior to the introduction of any of the strategic approaches and, to some extent, some impressionistic evaluation of the work.

Nonetheless, some very useful information began to come through as the programme developed. Elsewhere are comments from students and parents with respect to how they judged the programme. The teachers themselves responding anonymously through the coded questionnaires and in answering the questions of the advisory committee have also made some judgements which are recorded in other parts of this report.

The student results cannot all be reproduced in this report, but some representative examples are given. What was of particular interest to all of those working on the programme was whether the less proficient learners in the classes were making more progress than they might otherwise have made. Also of interest was whether students improved their approach to learning and whether there were any signs that students, and particularly less proficient learners, were improving their approach to the learning material. Many reports of student progress are included in other sections. The following examples supplement these other statements.

A teacher, working with the consultant, set up a three step preparation programme in which the teacher described the secret to examination success as:

> *"1. academic preparation – knowledge retrieval*
>
> *2. examination method*
>
> *3. psychological preparation (self talk)*
>
> *RESULT – ACADEMIC SUCCESS"*

Working through this procedure, assisting students to sort out the important from the unimportant information, describing methods of dealing with examination questions and then practising them, and taking the class through exercises in positive self talk, the teacher was able to offer them better preparation than in previous years. What follows is the complete statement the teacher supplied following the school examination:

> "[consultant] *I have written down a record of my method/approach to exam preparation ..... However, despite its draft form it's on paper and I shall modify it when more time is available – I have a lot to do presently!*
>
> *As to their exam results, the overall form results were:*
>
> | | *Form result* | *Class Result* |
> |---|---|---|
> | *High* | *87%* | *87%* |
> | *Median* | *51%* | *61%* |
> | *Low* | *14%* | *30%* |
>
> *Three students in the class scored under 50%..... So – the three students who did not 'pass' did not respond to me or [another teacher] offering of help. One student did at the <u>end</u> – too late. They lacked any sense of motivation despite goal setting earlier on.*
>
> *Three students did better than I ever hoped:*
>
> *One gained 61% when I thought he'd get approximately 39%*
> *One gained 52% when I thought she'd get approximately 40%*
> *One gained 54% when I thought she'd get approximately 45%*
>
> *One student was about 10-15% lower than I expected at 68%, but after a long discussion with her we both agreed that English was a subject she was was 'naturally' able in and she had become complacent in it (re time for examination preparation) to improve her other subjects (especially maths where she was struggling).*
>
> *The class was beaming ear to ear when I gave them back their results and explained their median. When I asked them: 'why do you think you did so well?' they replied: 'because we were so well prepared'.*
>
> *Although I know that they were an able group, they had started the year ununified, negative about English and at times hostile to a challenge. Their grades last year were also a lot lower than I thought they were capable of.*
>
> *In their final year's report 75% of the class had their grade rise from their mid year one. It has been a very rewarding year teaching* [class] *and when I reflect on my initial comments about them to you, I realise how far we have come together.*

I feel very much that the class and I have been working as a unit and not as two separate entities, teacher versus student. I feel confident to send them off to face their school certificate year and I think they too (with some exceptions) feel more confident to achieve their potential."

There were other examples of examination preparation including tutored examinations for senior students. Student comments on the value of these examination preparation programmes are included elsewhere in this report.

In terms of examination results, special attention was paid to the targeted students who were regarded as less proficient learners than their classmates. An example of the difference in gains made is taken from a school certificate English class where the June and September school examination results were compared. The June examination was taken shortly after the programme was introduced. In this case, the marks were scaled marks. The targeted students made a gain of 20% above their June result, while the remainder of the class made a gain of 10%. It is interesting that this trend was not entirely universal. In some cases students outside the target group, more toward the middle of the class, would show greater progress.

Sometimes, translating what were by any standards very reasonable (and sometimes excellent) improvements in performance in the classroom to examination grades proved to be quite difficult. This is an area where further concentration will need to be given. For example, one teacher submitted two sets of results on the same day. The mean score for the class improved from 52% following the teaching of the topic to 68% following the reteaching and retesting model described elsewhere. The unscaled examination results, however, for the whole class increased by only one percentage point (though for the targeted students they increased by three percentage points).

Another teacher compared the comprehension marks of her class at the beginning of the year and then at the end of term three. Since the tests were set at appropriate levels on both occasions, there would be no expectation that the students would necessarily increase their scores (though naturally one would hope that they would). The proficient learners in the class did improve the mean score by three percentage points which is unlikely to be significant. For the targeted group, however, the increase was marked. This group of less proficient learners increased their results by 17%.

On other occasions an individual student might do particularly well. In a fifth form class, a student who had been in a special education experience class was mainstreamed into a regular class to repeat the fifth form. This youngster took a pre test in computer studies with a very clear determination to find out exactly what she didn't know in order to correct it. Working in a cooperative group she was, to quote the teacher, *"on task in quite an astonishing sort of way"*. This student scored 14 out of a possible 15 on the post test, taken individually.

Another teacher took an analysis of students who had made a significant improvement across two parallel tests on set novels for her third form class. The students who had improved were checked to see how many were in the target group. Since the improvement was from 42% to 58%, it was thought this might be a good method of checking the improvement rates for less proficient learners. Twelve students out of a total of 24 showed a marked improvement in their results. Of the six less proficient learners identified at the beginning of the programme, and who took both tests, three were included in the group of improvers.

Taken together with the results of student activities included elsewhere in this report, it can be seen that classroom results may have been showing up more clearly the effects of the strategic teaching/learning programmes than public examination or school examination results (though some interesting improvements were observed in the latter).

This issue is raised again in the discussion section.

As noted previously, these results were not obtained from an experimental approach. They are a representative sample of similar results obtained by a number of teachers. The volume of results show a trend that is clearly toward improving outcomes for students. This project demonstrates the efficacy of introducing strategic approaches to learning. There is sufficient evidence in these results to warrant further development of these programmes and investigation in classroom settings with practising teachers. These results were obtained in the normal course of teacher activity. This should be the location for further study.

TEACHER PERCEPTIONS OF THE PROGRAMME

Teacher perceptions of the programme can be gauged from a number of sources:

1. Diary entries submitted by the teachers in the normal course of the programme work;

2. Responses made during weekly team meetings with the consultant;

3. Responses to the post programme questionnaire;

4. Responses made during the advisory committee meetings held in each school during February 1992.

The diaries are a permanent record of teacher-consultant interaction dealing with day to day and week by week programme development and problem solving. These comments are typically directed at classroom activity, but from time to time teachers commented on the utility of the programme, concerns they were experiencing, successes they were having and a range of other matters. In their responses on the questionnaires the teachers were working under their code names so that, unlike their diary work and the responses they made during the formal meetings, the comments were totally anonymous. The weekly meetings held in each school allowed teachers to share their concerns and their successes, to make comment on how they felt about the programme, and generally to offer support to each other as well as gather support from the consultant, and the consultant from them.

Finally, the meeting with the advisory committee occurred almost three months after the completion of the questionnaire data and is even further distanced from comments made in diaries or during weekly meetings.

TEACHER USE OF DIARIES

From the outset of the programme, an essential element of the interaction between the consultant and the teachers was the diary form. A printed diary form was used (see appendices) and each teacher kept a folder to contain diaries and other material which they would accumulate across the period of the project.

The diaries had the advantage that teachers could keep track of their progress and keep a record of responses from the consultant. The diaries also provided the author with a permanent record of proceedings which could be codified if necessary after the style described by Oldroyd and Tiller (1987). In this case, the permanent record serves as an opportunity for retrospective analysis of the exchanges and maintains data in a form provided by the teachers. These data would be entirely consistent with typical classroom information.

As teachers completed their diaries, photocopies were taken so that the teacher could retain one copy and the consultant the other. Equally, the consultant kept a folder of each teacher's diaries so that a permanent record could be retained. Diaries were completed on a weekly basis and given to the consultant when he was in the school each week.

Once a diary was received, the consultant would read it and type up a detailed written reply. Two copies of these replies were printed off, one as a permanent record and the other for the teacher. The consultant's response was handed personally to each teacher on the subsequent visit. The exchange between each teacher and the consultant remained confidential.

In addition to the diary notes, a second form of exchange occurred where the consultant kept any record of individual discussion or classroom observation. These written notes were always handed to the teacher at the conclusion of the discussion or observation. It was at the teacher's discretion whether photocopies were taken of these notes and given to the consultant, though they invariably were.

Diaries varied in length from a few sentences to quite lengthy detail. An indication of the use of the diaries can be taken from the numbers that were completed. Since it was entirely at the teacher's discretion whether to return a diary form, the number of returns is probably of some interest. It should be noted, however, that some teachers aggregated their diaries over two to three weeks (for a variety of reasons). It should also be noted that in the first two to three weeks of the programme, teachers were only beginning to learn about strategic approaches (those of them who were new to the programme) and others were reorienting themselves following a term of working without the consultant present.

At School One 123 typescript responses were provided to teachers and at School Two 115 were provided. Some representative examples of the exchanges between teachers and the consultant follow.

EXAMPLES OF DIARY EXCHANGES AND DISCUSSIONS

Example One

In this example the teacher provided the consultant with the following notes:

> *"My teaching strategies are beginning to be influenced dramatically by being involved in the special projects group and learning the various advocated strategies.*
>
> *One example of this is my seventh form class. I am very aware now of not 'expecting' to do or have done things – instead, I voice my expectations and we collaboratively design strategies/steps etc to meet the expectations (which evolve from my perception of what has to be done). I am now more likely to provide the class with goals/objectives for a unit/exercise/class.*

One exercise that illustrates this is when I sat down initially with seventh formers and we devised a list of steps to go through, to analyse a piece of critical writing or indeed any handout given to supplement notes, etc. We talked about what I hoped they would do and how to achieve this. The discussion stemmed from me explaining to them the need for them to be more active rather than passive to achieve success. (I had explained the differences to them, they were quite fascinated – as I had been.)

I have attached a copy (in draft form) of what process we came up with. Although a momentary thing – we then went on to apply it:

to a general introduction to 'Othello' – explaining plot, source, themes, etc.
to an academic and quite sophisticated critique of the play (also called 'an introduction to drama').

We then tested the retention and understanding of each piece of writing by verbally asking:

- *memory based questions*
- *answers that required processing of information from the critique end, then applying it*
- *opinion/response questions*

The response to these was quite outstanding. The students and I felt positive about what we were achieving – an increased responsibility for personal learning.

Approximately 80% of the 20 students will be going on to tertiary education next year and I am very conscious of their needs to become independent.

[The teacher then went on to describe more traditional means of dealing with such critiques which included reading set critiques, listing and highlighting aspects as they arose in the play, and the like.]

The students are now racing and identifying issues for themselves, as they occur as we read through the play. Wonderful! I really do feel that I am increasingly becoming truer to the definition of 'facilitator', a term I feel more comfortable with at this senior level of teaching than the traditional concept of 'teacher'.

To measure my fourth formers' ability to translate work done in fourth form class on 'Z for Zachariah', to an exam question, I gave them two School Certificate questions.

[The marks obtained for 21 students were: lowest mark 5 out of 10; highest mark 10 out of 10; median mark 8 out of 10.]

I had [teacher – HOD] *check the marks which confirmed my initial outcomes. I have put this down to a number of factors:*

- *the teaching of content being more actively oriented (spider maps, cooperative group work, advance organisers)*
- *they did not have a time pressure*
- *my modelling of how to approach a question*
- *increased enthusiasm and motivation to do well (which I mentioned in my last diary)*

The students were naturally pleased with themselves. This creates a spiral effect for improving application.

We have now started a new unit on debates. I have:

1. *outlined goals for each student to work toward (ie expectations)*
2. *given a pretest to gauge present basic knowledge*

This makes me feel more 'secure' as a teacher. I feel in control of their learning but also feel that I'm increasingly sharing the 'control' with them. For example, before we wrote down the goals, I got [the class] *to tell me why they thought I was wanting them to study and participate in the debates.*

FIFTH FORM CLASS (non School Certificate)

I have done the following (further to our discussion). Introduced:

- *media – TV and radio*
- *outlined first goals (I felt a whole list of goals would confuse them so will give each one at a time)*
- *given a pretest for terms (technical terms required to be learned)*
- *got the students (in pairs) to produce flashcards for the 43 terms*
- *produced a handout for the students to graph their progress (attached)"*

This diary note was dealt with in the usual way through a written response and follow up discussion on the consultant's next visit to the school. The written response was a little less lengthy than some, but it was judged to be all that was required for the task. It read as follows:

"[teacher] *what a nice surprise. I put your papers in my bag and didn't get back to them until I had read all the notes I took during the day.*

Your seventh form must be feeling pretty good about the skills they are developing. You can take a bow too! They can't do it if you don't set them up and then let them get on with it. Isn't it interesting that we started with a target of the bottom 30% and here we have the top 10% gaining advantage as well.

The fourth form result is really pleasing. The confirmation through [teacher – HOD] *is really important. Remember that we don't have to be 'scientific', just rigorous.* [HOD] *comments indicate a careful scrutiny. Your own estimate of the usual mark range for these students will not be unknown to them, either! Finally, the fifth form programme and progress chart is great.*

So, a good week."

Attached to the teacher's diary note was a signed note from the teacher's HOD. The note carries the words "*agree with marks*". The HOD went on to note his understanding of the usual marks range for three students he had selected to comment upon in detail. His comments were as follows:

"STUDENT ONE: Good specific points - carefully written. Ten out of ten. (usual mark range 60-70%)

STUDENT TWO: agree about total mark (five out of ten). I would have distributed the marks differently. [details followed] (usual mark range 20-40%)

STUDENT THREE: nine out of ten. Excellent answer, very good use of questions. (usual marks range 35-50%)"

Example Two

The second example of a diary comment comes from a period toward the end of the year where a teacher with School Certificate class was working very hard with examination preparation. In this case the teacher had included some test results and a comment from a student which the teacher felt was of some interest.

The teacher provided the consultant with the following notes:

"I started using flashcards on the 23rd of last month. I haven't used cooperative groups for a while, but have put students back into groups for revision. I changed the groups around a bit and there were no complaints from the class.

Students are working well with flashcards – I have attached some results. They are very pleasing. [student] *made an interesting comment and I have got her to note it down for you.*

Thinking about next year, I cannot decide on whether I should use flashcards all year – or to do them at the end of the year (novelty value/exam motivation, etc). Any ideas/comment?

Revision Testing

I started this on Monday thinking I had seven lessons left with my class and that would allow me to revise about five difficult sections of work. Guess what:

- *gift service assembly was period one – Tuesday (the time I have the class)*
- *no doubt other assemblies, etc will take more of my time – it is so frustrating;*

Anyway – Monday I pretested the class on supply and demand and then got them to go over the paper in groups. I was running out of time so I quickly went around groups checking on progress. I would have liked to question individuals in each group (next time hopefully). The students then sat a second test.

Problem

The tests are on the same topic, ie supply and demand – however they each have different information in them and this will have an effect on the result, won't it?"

[The test results followed. The results were taken from the following procedure which the teacher described as revision. In fact, it falls into the teach-reteach category of strategies since it was not a traditional, didactic revision exercise. The class were pretested on a subject that had previously been taught, following an opportunity to revise. In cooperative groups, the class then took the original test question and attempted to obtain as close to perfect an answer as they could. Once the best possible result had been obtained, the class were given a second, equivalent test which they had not seen before. Two days later the class were given a third, equivalent test which they had not seen before.]

Results of the test-group-test-test series:

Score	*Pretest %*	*Group %*	*Post-test %*	*Retest %*
Class mean	*69.8*	*91.5*	*86.2*	*80.3*
Bottom third mean	*50.3*	-	*56.3*	*66.3*

Student Comment:

> *'I have used the technique of flashcards for economic studies and have found them working greatly to my advantage. When using the cards, the person testing me is learning something as well as of course myself.*
>
> *When I applied the cue cards to actually studying from my folder (notes) I was amazed at how many words and terms used in my folder were on the cue cards.*
>
> *Some parts of economics, particularly in the introduction, most of the unit is defining and the cue cards have helped me understand these definitions.*
>
> *Sometimes in an exam a word will come up, for example: durable goods, and in your head you know exactly what it means, but getting it down on paper is often the problem. Now, because of the continual use of flashcards I can put down quickly and precisely the correct definition of words.*
>
> *Using flashcards is a form of study. However, it doesn't have to be the kind of study where you sit down and actually force yourself to learn words, but understand – it can be fun and a form of great study without straining the brain.*
>
> *So far in this learning process I have gained 100% in all sections, therefore it must be of advantage to my learning and study processes.' "*

The consultant's notes read as follows:

> *"Following discussion with this teacher the following notes were jotted down for later comment:*
>
> 1. *frustration of disruptions*
> 2. *note marks sheet*
> 3. [student] *asked* [teacher] *to mark extra work*
> 4. *discussed test content issue – it's OK* [teacher] *is mixing the tests well* [as discussed at an earlier date]."

The response to the diary note is as follows:

> "[teacher] *we talked about the progress your class is making and the marks they have gained. A couple of brief comments:*
>
> 1. *on the School Certificate question, the following emerged:* [an analysis of the class and bottom third average followed]
>
>   *The bottom third marks were affected by small numbers and quite a variation on some of the marks, as we discussed. Nonetheless, the marks are all in the same direction – up! This despite the fact that chance landed the kids with the hardest test as the third one. It's a good lesson for them, however, to find that the test gives a different approach to the questions, one they hadn't expected. Better prepared for the exam if they see that the lesson is there for them.*
>
> 2. *On the flashcards the mean score for the two dates are:*
>
>   *31 October 17.6*
>   *6 November 17.8*
>
>   *These are just under the 90% mark and easily within the mastery criterion.*
>
> *You must be very pleased with these results. I read* [student] *note which is a real testimonial on it's own! I also noted your comment that* [student] *had asked for additional work to be marked. All the signs of high motivation are there."*

SURVEY OF TEACHERS

INTRODUCTION

The introduction of the programme to the two secondary schools had already begun when this project was officially approved. During 1990 in both schools, and intermittently during 1991 in School Two, the author had been working with a number of teachers who had expressed an interest in joining him to develop a strategic classroom approach. It was apparent during these preceding periods that teachers working on the programme spoke openly with teachers not on the programme about the work they were doing and the kinds of results they were achieving. Indeed, as the results which follow show, there is a significant amount of cross fertilisation of ideas going on in the schools most of the time.

For this reason, it was apparent that no teachers would be completely naive to some of the programme details, though none of them would have dealt in such precise detail as they were about to in this programme with any of the strategic approaches developed. Nonetheless, it was felt important to attempt to survey the current teacher beliefs and practices of all those teachers who would join the programme in order to obtain some indication of how they perceived learning and teaching and their current use of strategic approaches. A teacher questionnaire was drawn up which attempted to target some of the issues which had emerged during the previous programme activities and which suggested themselves as possible areas for change both in teacher belief and in classroom practice. The items of the questionnaire will be found with the definitions in appendix 2.

DEVELOPMENT OF THE QUESTIONNAIRE

The questionnaire for teachers was compiled from a draft developed by the author. The draft reflected issues that had arisen from diary notes and teacher commentary as well as the author's observations of teachers and students during the 1990 pilot project and in the first term of 1991.

The questionnaire was discussed with a number of colleagues before its final completion. At this stage of its development the questionnaire was seen as a first attempt to obtain useful information from participating teachers.

The questionnaire was developed in three parts initially. Additional questions were added to part three once the programme had been completed.

Part one of the questionnaire was designed to obtain demographic data, to check target classes teachers would nominate for the programme, and to obtain some information on the reasons teachers had entered into the programme.

Part two of the questionnaire aimed to tap teacher beliefs about learning, academic success and failure, and the kinds of objectives teachers had for their students.

Part three asked the teachers about elements of teaching strategies which had proved to be of interest to them during the pilot programme and which it was thought might offer some insight into changes in teacher beliefs and/or teaching practice. Specific questions were asked about strategies which had proved to be of interest to teachers during the pilot project and about cooperative learning which many teachers had found to be of interest to them.

ADMINISTRATION OF THE QUESTIONNAIRE

The questionnaire was administered by the author to all teachers participating in the project at the beginning of term two of 1991. A specific time was set aside in both schools where teachers could sit comfortably and work on their own. Similar conditions were created for completion of the post questionnaire at the end of the project period.

SCORING THE QUESTIONNAIRES

The questionnaires were collected together and examined by three people to establish scoring categories for the open ended questions. The author and one other scorer drew up the definitions and independently scored items. Agreements and disagreements were noted.

Reliability was established at the appropriate level (see the section on reliability). The third person acted as an independent checker when any further disagreement was discovered.

ANALYSIS OF RESULTS

The results of the teacher questionnaire are set out in their three parts. Demographic data are appropriately reported earlier.

Since the purpose of the teacher questionnaire was to check for changes in teacher beliefs or teacher practices, only those questions where any alteration occurred are reported here. The complete details of questions where no changes occurred will be reported at a later date.

ANALYSIS OF RESULTS – PART TWO: TEACHER BELIEFS

Part two of the teacher questionnaire dealt with teacher beliefs. It was not expected that there would be any significant changes in teacher beliefs. However the opportunity to look at ways teachers thought about success and failure in school, how learning takes place and the effects of teaching upon learning was taken.

The results are set out below. In each case the question is noted first.

In this section only two questions revealed a change in the ways teachers responded. The first of these was question 6.

Question 6: "When students failed to achieve academic success, what are the three most important contributing factors?"

The categories developed from teacher responses to this question were: (a) family peer issues, (b) motivation, (c) self esteem, (d) history of failure, (e) skills, (f) ability/intelligence, (g) failure of teaching strategies, (h) poor learning strategies.

The post questionnaire responses to this question across both schools showed a reduction in attribution to family and peer influence from 38% down to 8%. In School One attribution to poor teaching strategies rose from 14% to 43%. In School Two a lack of student skill rose from 25% to 50% and attribution to poor learning strategies rose from 33% to 58%.

It is not clear why these changes occurred. One might speculate that the increased awareness of teaching and learning strategies made teachers more aware of these factors where previously they might have been inclined to attribute school failure to influences outside the classroom.

The other question to show what appears to be a significant change was question 7.

Question 7: "What, in your view, are the three most important characteristics of the successful teacher?"

The categories determined for this question were: (a) management skill, (b) capacity to motivate, (c) communication skills, (d) knowledge of subject, (e) interest in professional development, (f) sound relationships, (g) teacher confidence, (h) effective teaching strategies. In this case, the combined school data showed a move away from sound relationships where the percentage of responses dropped from 73% to 23%. Both schools increased their scoring on management skills which went from 46% to 81% on the combined data. School Two increased the attribution to ability to motivate students from 17% to 67%.

In the case of question 7, the author's own experience in the classrooms of the two schools and the teachers' responses to the questions in part one clearly suggest that there was no reduction in sound interpersonal relationships between the teachers and students. Indeed, it is subjectively the impression that the relationships improved. The reason for the reduction in attribution to this category may, therefore, have to do with an increasing emphasis upon specific teaching skills. What is even more puzzling is a reduction in School One in attribution to good teaching strategies, though this was of a lesser degree than the other trends.

ANALYSIS OF RESULTS – PART THREE: STRATEGIES

Part three of the questionnaire asked teachers to respond to questions that related specifically to strategies. These self reports on the elements and use of strategies were expected to show if teachers began to re-evaluate how strategies operate in the classroom. Additional questions were asked in the post questionnaire about the strategies that teachers were using.

The first question asked teachers how they could train students to monitor their own work.

Question 1: "How can a teacher train students to monitor their own work?"

The definitions that emerged from the teacher responses to this question were: (a) self evaluation, (b) peer evaluation, (c) goal setting and review, (d) self management of review, (e) not germaine to the question.

The responses to the pre questionnaire for this item were not always easy to score. A number were simply a tautology so that the definition of self evaluation needed to be very carefully scored, and the final category of "not germaine" was used because a number of responses failed to address the actual question. The difficulty may have lain in the way the question was worded.

Nevertheless, it was possible to see a shift in teacher responses. Both schools showed an increase in the category of self evaluation with the combined data moving from 35% to 69%. At the same time, peer evaluation went up from 15% to 25% on the combined data. An interesting issue for this question was that the number of teachers who couldn't give an answer or gave one not germaine to the question dropped from 12 to four on post test, and the number of scorable answers rose from 26 to 32.

This seems to indicate that teachers were moving toward the active promotion of self evaluation and peer evaluation behaviours. It is quite likely that the peer evaluation would have resulted from the increased use of cooperative groups, though to some degree this might also have been an element in the self evaluation responses.

Question 2: "What are the principal rules students should be taught for reading a page of textbook in a relatively short time, in order to recall the essential elements and some of the details."

The categories that emerged from this question were: (a) read-reread, (b) understanding the purpose, (c) skim reading, (d) cognitive strategies, (e) stepwise procedures, (f) insufficient answer, (g) not germaine to the question.

In this question the responses across both schools showed a marked increase from 19% to 58% in the active promotion of cognitive strategies. Again, the number of answers that were given showed an interesting trend, with fewer answers being offered to the other categories in the post questionnaire. Since teachers could offer as many options as they wanted, this reduction in the use of other methods is noteworthy.

Question 3: "Many students can recall things over short periods but can't remember them for any length of time. What actions can a teacher take to deal with this?"

The categories emerging from this question were: (a) revision, (b) cognitive strategies, (c) stepwise procedures, (d) global understanding. An additional category was derived from the post questionnaires which had not emerged in the pre questionnaire. This category was: teach-reteach.

The trend across both schools was a significant move away from revision. The percentage of teachers offering this solution dropped from 63% to 12%. At the same time, both schools increased the use of cognitive strategies. The combined school result for this was an increase from 23% to 73%. In both schools, a new statement was introduced with 35% of the combined school results offering teach-reteach as an option.

The move away from simple revision towards a strategic approach involving carefully planned cognitive processing aimed at encoding, storage and retrieval skills was an interesting result. The fact that the notion of teach-reteach had been introduced during the course of the programme was an interesting reflection of the willingness of teachers to pick up new ideas as the programme continued.

Since many of the cognitive processing strategies had been used in the pilot programme and during the first term, it was not surprising that some of the teachers were opting for this kind of approach in the pre questionnaire. The intensive work that was carried out during the programme no doubt influenced the significant movement toward these strategic approaches, but teach-reteach was an approach that developed only during the course of the programme itself.

Question 4: "Do you have students work in groups in your class?"

This question offered a yes/no opportunity followed by a series of questions which asked about the purpose for using groups, how the groups were arranged, the ways in which groups were selected, whether teachers taught the skills of group work and if so which skills they taught. The results are set out in a table which identifies each of these issues. Since there was almost no difference between the schools the data have been combined. The table shows the pre and post questionnaire results.

TABLE 8

Details Of The Use Of Cooperative Learning

Category	Combined School Data Pre Questionnaire		Post Questionnaire	
USE OF GROUPS	Yes 21	No 5	Yes 24	No 2
GROUP SELECTION				
Student choice	21		13	
Ability groups	5		2	
Random assignment	8		3	
Mixed ability (teacher selection)	13		21	
[some teachers nominated more than one group selection option] [mixed ability includes gender/SES/personality and behaviour mixes]				
GROUP SIZE				
2	-		2	
2-3	3		5	
2-4	-		3	
3	2		3	
3-4	-		3	
3-5	4		-	
3-6	2		-	
4	5		10	
4-5	-		1	
4-6	1		-	
[some teachers nominated more than one group size option]				
SOCIAL SKILLS TAUGHT	Yes 9	No 12	Yes 15	No 8
[not all teachers answered this question]				

Cooperative groups were already in use by the majority of teachers when they entered this programme, largely the result of their participation in the pilot programme and the work done in the first term of 1991. On completion of the programme only two teachers had not opted into the use of cooperative groups.

Group selection showed a marked change. From a predominance of student choice the exact reverse occurred so that teacher selection of mixed ability groups became the predominant use. The use of random groups reduced significantly and the use of (streamed) ability groups diminished even further than it had been at the beginning of the programme.

Most secondary schools in the author's experience allow students to choose where they will sit in the class and, where groups are used (particularly in subjects like science) most teachers permit students to form their own groups. It has been an interesting phenomenon that many teachers when encouraged to select groups for strategic purposes have been concerned that students would object to teacher selection. In fact, many students in this programme initially objected to being asked to work in teacher selected groups. These objections rapidly diminished when the teachers showed a determination to establish a strategic environment in which they took control (at least in the initial stages) of the grouping.

Comparison can be made between this situation and the student responses to the question inviting them to comment on the use of teacher selection of groups. Group size also altered somewhat. The range of group size dropped a little as teachers appeared to become clearer about appropriate sizes for the work they were doing. Only one teacher nominated a group size above four (and then not always), while at the beginning of the programme a number of teachers were running their groups up to five and six.

Finally, along with the issue of group selection, the number of teachers who taught the collaborative skills necessary for groups to work effectively increased significantly. It is interesting that still, not all teachers found it important to ensure that the students were given the necessary training in the collaborative skills appropriate to cooperative group work. Nonetheless, the increase from nine teachers who did this to 15 must be regarded as a satisfactory change across two school terms.

Teachers were asked to nominate the purpose for which they used cooperative groups and, in a later part of the question, the skills they taught students in order to make the groups as effective as possible.

With respect to purpose, the responses from teachers fell into four categories. These were: (a) workload management, (b) class or subject management, (c) the benefits of cognitive processing within the group, (d) the benefits of group motivation.

The pre and post questionnaire responses showed no difference at all in allocation to workload management, a decrease from 39% to 27% in class or subject material management, an increase from 19% to 31% in the use of groups to effect cognitive processing of the work, and a decrease from 42% to 31% in the use of groups to gain the benefit of group motivation.

These changes do not appear to represent any significant movement except, possibly, the trend down in the use of groups for class or subject management and the trend up in their use for cognitive processing.

An attempt to deal with the skills being taught is made difficult by the number of teachers who didn't answer this question. Though the number of teachers who taught social and collaborative skills increased over the period, it's possible that this was one of the more difficult areas to get to grips with. The notion of teaching social and group skills in secondary classrooms by subject domain teachers is relatively novel. That the teachers were willing to try at all says a great deal for their enthusiasm for cooperative group work. Though teachers were attempting to develop these social skills not all of them, it seems, decided to write down the exact skills they taught.

In the pre questionnaire the skills that emerged were: (a) academic/cognitive interaction skills, (b) social/collaborative skills, (c) functioning/management skills. With the exception of the functioning/management skills where the number of responses doubled, the number of teachers who reported teaching these skills remained almost identical. Similarly, more than half the group on each occasion offered no answer to this part of the questionnaire.

Question 5: "Read the following list and tick the methods you used during the (appropriate previous period)."

This question was asked of the teachers before they began the programme and at the conclusion of the programme. A great many of the teachers had participated in the earlier work so that some of the strategies that were planned for the programme were already in the repertoire of at least some of the teachers.

The following tables show the change in the use of strategies. Included are some strategies which were developed during the course of the programme which had not been available on the menu of strategies from which teachers could choose in the pilot programme or the first term of 1991. The pre questionnaire listed all those strategies which had been discussed with teachers during the pilot programme or subsequent to it and before the beginning of this project. In one case, none of the teachers had taken up the opportunity to try working with the strategies, and in other cases only one or two teachers had taken them up. It can be seen, however, that in one case almost all the teachers had begun working on one strategy, and in other cases a number had.

For the purposes of comparison, cooperative groups have been added to this list using data taken from question 4.

TABLE 9

Percentage Change in Teacher Use of Strategies

Strategy	Combined Schools %		School One %		School Two %	
	Pre	Post	Pre	Post	Pre	Post
Advance organisers	62	81	36	79	92	83
Graphic transformations	35	65	7	57	8	75
Paraphrasing	4	23	7	14	0	33
Modelling strategic behaviour	39	39	36	42	42	33
Post organisers	12	15	14	14	9	17
Class displays	19	35	29	36	7	33
Cueing strategies	12	15	14	7	8	25
Concept charts	0	19	0	21	0	17
Spelling strategies	19	23	14	14	25	33
Self monitoring	8	23	7	14	8	33
Pre-post testing	15		14		17	
Flashcards	15		14		17	
Cooperative learning	81	92	71	93	83	92

It can be seen from the table that across both schools, cooperative learning was being used consistently by a large number of teachers, though not all, and this number increased.

Question 6: "Please name three differences between cooperative learning groups and traditional class group work."

The options that the teachers offered from the pre questionnaire were categorised on the basis of the way they expressed them rather than the traditional differences raised in the cooperative learning literature. It was felt that it was better to go with teacher descriptions and find the groupings there rather than to try to force them into the now classical categories of positive interdependence, individual accountability, group reflection, small group collaborative skills and face to face interaction skills.

The categories to emerge from the questionnaire data were: (a) group responsibility, (b) active versus passive learning, (c) on task management, (d) social skills interactive behaviour, (e) individual accountablity, (f) interdependence, (g) heterogeneity, (h) insufficient answer.

The interesting trend across both schools for this question was the increase from 31% to 65% for the category of on task management, and the equal increase from 27% to 62% for group responsibility. A smaller increase from 8% to 35% was noted for the category of heterogeneity.

What appears to be emerging from this question is the recognition by teachers that groups have to become skilful in managing the task and remaining on task. They must act collaboratively and cooperatively as a team to ensure that the group accepts responsibility for the completion of work. For cooperative groups to be an effective element of a strategic environment, they have to be heterogeneous or one is left with the bottom third of the class again being left to flounder.

STRATEGY USE AND STUDENT RECOGNITION

Data were abstracted from the teacher questionnaire and the student questionnaire in order to find whether students recognised the use of strategies by teachers. This is by no means a perfect measure, but it does give some indication of whether the teachers, using elements of a strategic environment at various levels, were working in such a way that their students were aware of it.

The tables below set out the levels of use reported by teachers in the post questionnaire part one question four. These levels were indicated against particular classes. The class data from student questionnaires were analysed to find the extent to which students reported that strategy being used in their class. The average rate of reporting and the range of recognition across classes was then taken for each strategy reported.

Question 4 of part one reads:

> "Please give a rough rating of the level you used a strategy with each class.
> Give five if used regularly and frequently through two terms.
> Give four if used regularly and frequently through one term.
> Give three if used through one or both terms but not on such a regular or frequent basis as those above.
> Give two if you tried the strategy intermittently.
> Give one if you used it only intermittently or hardly tried it at all."

TABLE 10

Recognition Rates by Students of Strategies Reported in Use by Teachers

Intensity of use	Recognition Rate %	Recognition Range %
5	78	56-100
4	83	22-100
3	89	45-100
2	80	3-100
1	40	14- 81

It can be seen from this table that the level of intensity of use by teachers did not have a significant effect upon recognition rates by students.

TABLE 11

Student Recognition Rates by Individual Strategy Used

Strategy	Mean Recognition Rate %	Range of Recognition %
Advance organisers	58	0- 95
Curriculum transformations	78	50-100
Paraphrasing strategies	87	75- 95
Spelling strategies	98	95-100
Pre and post testing	70	40- 95
Flashcards	97	90-100
Progress charts	95	90-100
Cooperative learning groups	97	81-100

Again, these recognition rates are by no means a certain guide to what was happening in the classroom, but they present an interesting picture of student recognition. Not all the strategies were included since teacher nomination and student nomination did not necessarily coincide.

To some extent, the rate of recognition is affected by the nature of the strategy and the amount of disclosure the teacher offered the class with respect to usage. For example, it would be difficult for a student not to recognise that they were in a cooperative learning group or that they were using flashcards, were engaged on a specific spelling programme or that the class was using progress graphs which students had to fill in regularly. On the other hand, if a teacher did not inform the class that s/he was using advance organisers, some students may not pick it up. An interesting commentary on this element of the work is the fact that where students were specifically informed and spent time tracking the use of advance organisers (see elsewhere in this report) they were more than aware of what was happening. Students in other classes where the intensity of use was quite high but the students were not specifically informed that this was what was happening to them, were quite clearly less aware.

ADVISORY COMMITTEE MEETING

A careful examination of the notes taken during this meeting, for both schools, shows that no comments were made by teachers which were in any way negative with respect to the value, content or interactional style of the programme. Members of the advisory committee asked a series of questions with respect to method of delivery of the programme, collegial support, the value of an outside consultant (and conversely whether the programme could be run from within the school using a designated position). Further questions were asked about the number of people who could be involved in such a programme, contacts with other schools, the involvement of heads of departments and other senior staff, and the sustainability of the programme. The issue of student learning was raised by members of the committee, professional development and the value to teachers, details about programme content and the implementation of a new approach.

The notion that teachers should be responsible for their own professional development, in much the way that medical doctors do, was raised by one committee member. The reality of this kind of professional development within the school setting was canvassed. A comparison between teacher preparation at colleges of education and professional development through this kind of programme, collegial support and the interaction of teachers across departments which is the dominant organisational structure in secondary schools were all raised. In particular, the issue of continuance of the programme in the absence of an outside consultant was raised.

Responses by the teachers to these questions and the spontaneous remarks they made during the course of the meetings were recorded. Teacher responses were analysed and brought together under the headings detailed in appendix 2.

This analysis is displayed below.

TABLE 12

Teacher Perceptions Of The Programme

Perception Category	Number of Responses
Engagement of colleagues	15
Progress evident	13
Teacher motivation	9
Programme acceptability	7
Collegial support	6
Value of the consultant	6
On site development	5
Gave direction	3
Programme validity	2
Reduced stress	2
Teacher control	2
Administration	2

The item that occurred most frequently had to do with the involvement of other teachers. There was considerable interest expressed by other teachers in the programme, though not everyone wished to join. A number of teachers remarked on the opportunity for cross curriculum discussion which is largely missing in secondary schools owing to the organisational structure of the departments. This issue was raised particularly by heads of department involved in the programme.

The next most commonly recorded comment had to do with the evidence for student progress, improvements in student-teacher relationships including school tone, and student interest in the programme. Not only academic skills changed, but an underlying change in staff-student relationship was noted by one of the principals' group. This person described 1991 as "*one of the calmest years in social management*". These comments ranged across such issues as academic progress, improved social skills and referrals for specialist assistance. For example, the support teacher in one school pointed out that all requests coming to her for support in their classrooms came from non- participants. In fact, this left an opportunity for those seeking such support to join the programme during the course of the year. In another case, a teacher reported students asking if certain elements of the programme (eg advance organisers for lessons) would be used during that period. In one case, a teacher reported students asking for a change of teacher in order to have access to the programme. (Comment is made elsewhere on two students who found group work personally too demanding.)

The notion that this was a new beginning for some teachers and that they were seeking further training drew a large number of comments. One teacher remarked that the programme was the best thing she had done since starting teaching. She described it as challenging and new. Another described it as the most stimulating and productive thing he had done in his teaching career. Others spoke about the need for this kind of development programme at the colleges of education. The nature of the programme was also commented on by a number of teachers. The most frequent comment had to do with the non-threatening nature of the consultant-teacher interaction. A number of teachers spoke about the issue of trust (which arises elsewhere with respect to the use of an outside consultant), while remarks were also made about the continuity of the programme and the fact that feedback led to a highly effective interaction pattern. The feedback, refers to both the diary exchanges between a teacher and the consultant, and the regular weekly meetings of the teams.

Two items were raised an equal number of times. The first was collegial support. Here, teachers spoke about opportunities to visit each other's classrooms, to obtain advice and guidance from colleagues within a context that was trusting and respectful.

The same number of items responded to the issue of the use of an outside consultant. This issue came up independently and in connection with the use of a support teacher of some kind (an issue which arises elsewhere in this report). The general responses in the teachers' comments had to do with trust, confidentiality, expertise and the stimulation of someone from outside the school working with the team on a collegial basis. One (also a member of the principals' group) commented: "*teacher questions can be answered because teachers don't have the resources to do it themselves*". Another commented that colleagues are less able to

assist each other than someone coming in from outside the school. Others commented on the overall viewpoint an outside consultant can bring to the task and the objectivity that may be lacking from a person from within the school context.

To balance these comments, some teachers remarked that it would be helpful to have both, but there was no support for the notion that the programme could be operated entirely from within the school.

The hands on support and the opportunity to carry out teacher development work within their own classrooms was appreciated by a number of teachers. One teacher remarked: "*The change for me has been more personal – I have far more specific objectives for each lesson. I can define my outcomes and measure them.*" Another teacher remarked on the regularity of opportunity to discuss programmes within her own classroom context.

The reliability of the strategic methods employed and the recognition by teachers that there was a theoretical basis for the programme was noted during the meeting.

A number of other items were extracted from the discussion. These items received less comment, but are included because they make interesting points. The first of these relates closely to the support issue noted above. This was the notion that the programme gave direction to teachers and helped them to see more clearly where their teaching programmes were going. One teacher commented: "*I now know where I'm going – the kids as well as the teacher.*" Another teacher commented: "*We needed a catalyst. The consultant took me above administration and into actual teaching.*" This teacher was also a head of department.

Other teachers commented on the reduction in stress. This comment is also picked up elsewhere in the report.

Although it was mentioned only the once, the idea that a member of the "top three" should be involved in the programme is important to note. This comment did not come from one of the principals' group attending these meetings.

Though no negative comments were made during the course of these meetings, one or two reservations were expressed. The first of these had to do with some disappointment on behalf of a head of department that the programme did not appear to have had an impact on the school's School Certificate results. A tutored examination taken prior to the public examinations (and which was part of the strategic programme) yielded an average of 2% better than students who did not take the untutored examination. Whether the programme could be expected to have such an impact after only two terms and while teachers became more accustomed to a strategic teaching programme is uncertain.

On the other hand, one teacher pointed out that their school had done particularly well in bursary examinations involving teachers and the students included in the programme. Again no cause/effect relationship could necessarily be expected in so short a time.

The tutored examinations were an interesting example, however, of the potential for change. A teacher reported that one group of students achieved a 15% increase across the group on tests taken before and after the tutored exam.

Another area of reservation expressed during the meetings was the perceived fall off in class exchange visits across the third term. No explanation could be given for this, except possibly the pressure on teachers during the third term.

ADDITIONAL FEEDBACK FROM TEACHERS

The regular weekly meetings, the opportunity to work with the consultant on a one to one basis either in discussion or in classroom observation followed by discussion and the exchange of diary notes and responses ensured a rich flow of feedback between the teachers, the consultant and among the teachers themselves. Even when teachers were struggling with challenging tasks that arise in every teacher's daily life, on no occasion did any teacher ask that their comments be restricted or withheld from any general statement about the work. Since a number of teachers' comments have been included in this report in order that the nature of the work, the tribulations as well as the triumphs would be noted, no detailed further analysis will be made of these responses.

Nonetheless, some remarks by individual teachers reflect the ups and downs of such a programme. These additional exchanges between teachers and the consultant complete the representative range of comments on the programme.

A head of department with many years experience commented:

> *"My involvement with this project has been my most valuable training as a teacher, including teachers college."*

Another teacher who had worked extremely hard with a seventh form class took heart from remarks made by other teachers about her targeted class. She wrote:

> *"I have had a number of comments regarding the independence of my seventh recently. I'm sure my use of some of the learning strategies and ideas we've talked over have contributed to this."*

The difficulties in getting started on some of the strategies were reflected in teacher comment. One teacher, having made a first effort to deliver an advance organiser, wrote:

> *"I began a lesson using an advance organiser - yuk! Actually, the lesson went well. I just felt uncanny reading the organiser."*

Needless to say, it got easier.

Teachers used the diaries to reflect upon how they were thinking about their teaching and the introduction of teaching strategies to their classrooms. One teacher put it this way:

> *"A personal statement of position regarding cooperative learning and advance organisers.*

I found this term very frustrating from the point of view of time management and the introduction of cooperative learning and advance organisers to my third form classes. I have grown in understanding these two concepts, and over the last four to five weeks have started to introduce them into many classes. There has been noticeable success in all of those classes. In one, a subject most suited to this approach, students have been more able to lift their work rate and their achievement has improved in nearly every case."

In a note written by the consultant following a long conversation with one of the teachers, the consultant responded:

"Finally, you commented that you thought the project had made your teaching more intensive. Looking over my earlier notes to you, I see that you had made some quite detailed plans from time to time so your impression is bourne out by the data. It was your feeling that the advance organisers had made your teaching more directed and oriented to the outcomes for the students. I find that very interesting because I am sure the organisers are as important for the teacher as they are for the students."

These comments flowed to and fro between the teacher and the consultant, among the teachers and the consultant in the discussion groups and, of course, around the staff room virtually every day. The interactive nature of the programme was an essential feature where both the teacher and the consultant showed mutual respect for the part each had to play.

PERCEPTIONS OF STUDENTS AND PARENTS

PARENT PERCEPTIONS

An important element of the programme was the reaction of students and parents. In the case of parents, the schools were given the option of holding a meeting to hear about the nature of the programme and to offer comments and suggestions to the consultant. One school chose to take this option, the other preferred to work with individual parents, or to communicate with parents on a class by class basis.

At School One, a meeting was called in the early evening and attended by approximately 50 parents. This was regarded as an excellent turnout. Twelve teachers joined in the meeting and the discussion was highly interactive.

The meeting enabled the consultant to explain the nature of the strategic classroom, to describe some of the strategies that were involved and to listen to the comments parents made. In order that the parents would be able to see in more detail the kinds of things that were happening in the classrooms, about half the meeting was taken up with a simulated cooperative learning lesson using a problem solving activity. Parents and teachers were mixed, at random, throughout the staffroom where they worked in groups of four.

Apart from a good deal of hilarity, the exercise quite dramatically illustrated, for some parents at least, the implications of using cooperative groups in the classroom. A number of parents approached the consultant after the meeting to comment that they felt a good deal of relief when they were able to stop working on their own and join with a team. One parent remarked that she was fearful of being chosen to speak for her team when the group work began, but totally confident to answer for them at the completion of the exercise. The groups were then asked to consider how they had operated in much the same way that cooperative groups of students are required to reflect upon the work they have done and how they might improve their performance on future occasions. This too proved to be an interesting exercise for the parents.

The consensus of views at the end of the meeting was that parents were interested, satisfied that the programme was valid and appropriate and that they would continue to offer their support to the school while it worked through the project period.

Mention is made elsewhere in this report of a teacher who wrote to parents explaining the nature of the work being done and seeking their support. More than one teacher at School Two worked in this way. In addition, a number of parents were contacted individually and some parents approached the school.

In one case, the parents of a fourth form student who had a long history of academic difficulty at school and with whom the class teacher and the consultant worked on the development of the paraphrasing strategy and a tape assisted reading programme, wrote personally to the consultant expressing their approval of the programme. This student received an award at the school prizegiving for her improved performance.

One teacher submitted the following statement toward the end of the programme period:

> *"On Wednesday I spoke to the parents of three pupils in connection with their child's choice of subjects for 1992, especially as it concerns fourth form language skills.*
>
> 1. [student] *I spoke to her mother for some time on the phone. She was very pleased that* [student] *had been acknowledged and had noticed a considerable change of attitude in* [student], *who was now doing school work in preference to watching TV and was also recorrecting and representing work for marking if the original mark was not up to her expectations. Mrs* [parent] *also commented that* [student] *was enjoying school, something that neither of them had expected.* [parent] *was very keen for* [student] *to continue with language skills in the fourth form.*
>
> 2. [student] *I spoke on the phone to his mother.* [student] *was keen to continue with language skills in the fourth form and his mother supported this decision. She thought that she had seen an improvement in his work. She also commented that she was pleased to see her son's poor level of achievement being addressed.*
>
> 3. [student] *Father phoned me and made an arrangement to meet me at school. He was accompanied by his fifth form daughter who said that she wished there had been a similar course for her in 1989. Mr* [parent] *had noticed some improvement in* [student] *work but did not often see his work. He was appreciative of the extra attention being given to* [student] *and would like to see him continue the course. He had been concerned* [student] *would have to give up an option to take language studies but had spoken to* [student] *typing teacher who had recommended that his son take language studies as a fourth former in 1992 and then resume typing as a fifth former in 1993 with increased spelling and language ability."*

Throughout the programme to the author's knowledge there was no record of any parent indicating concern or anxiety about the programme.

STUDENT PERCEPTIONS

Student responses from an anonymous survey are reported in detail below. During the course of the programme, however, a number of student comments were reported by teachers. Some of these comments have been included elsewhere, but the following illustrate some student reactions.

One interesting set of reactions was a survey of student views on the value of examination preparation. At the completion of a tutored examination during which students were taken through a number of issues relevant to preparation, study, application during the examination period and reviewing their examination answers, students were asked to rate the usefulness of the work. On a five point scale headed, extremely useful, useful, OK, not very helpful, waste of three hours, the students responded with 50% for the extremely useful category, 43.5% for the useful category and 6.5% for the OK category. No student rated the exercise as not very helpful or a waste of three hours. The ratings were taken anonymously. Following the ratings, the students could write in a comment. The following is a representative range of the comments written:

> *"Good to do, you know what you're doing wrong and you can fix it up."*
>
> *"It helped me learn what to do to get ready for certain sections."*
>
> *"It really helped me even though my exam technique was quite good. I learnt some more things to make it better! It was great revision - DO IT AGAIN!"*
>
> *"It was an excellent use of three hours."*
>
> *"I learnt about time management which I did not know before."*

A student who had rated the exercise as only OK had this to say:

> *"I found that I seemed to be able to do some sections quicker but the planning of my time seemed to hinder me."*

Two further students who both rated the exercise as extremely useful had this to say:

> *"This exam increases my understanding and should boost my marks."*
>
> *"I have got a sore hand."*

Such is the way of students. Perhaps to add a touch of sobriety to the scene the final example read as follows:

> *"Found it helped me with comprehension (mark improved a lot). Paragraphs mark improved a lot – very useful. Would like same thing next year."*

A similar exercise was later carried out for seventh formers. It was not possible to obtain many evaluations from this group of 28 students as 14 of them had to leave immediately after the exercise to take part in a student/teacher debate. The remaining 14 completed their forms. Three rated the exercise extremely useful, seven useful and four OK. No students rated the exercise as not very helpful or a waste of three hours.

In the course of the programme teachers gathered together a large number of student reflection sheets from their cooperative learning activities. These sheets aimed to ensure students would think carefully about the responsibility they were taking for their own work, the ways in which they could improve their performance through better collaborative activities, and gave them an opportunity to reflect on the kind of progress they were making. A few examples of student comment help to flesh out the responses students made to their questionnaire items on cooperative learning. In reflecting on their work about half way through the programme duration, one group of fifth formers said:

> *"We must listen to instructions, work should be done as a group, not split up, so that everyone understands what is happening."*

This group made a further remark which should, perhaps, be recorded for posterity:

> *"Our group never wants to be apart as we would surely die."*

Some of the other comments were:

> *"You get started straight away, work together as a group a lot better, the work has to be more clearly defined for each person."*

> *"I find the groups are really good because not only do you get to know each other, but when we find difficulties in some work, we can always ask our group to give us some help and understanding."*

> *"I think I tried harder with the group to help me and encourage me all the way. The group was mostly always wanting to help each other."*

There were, of course, pros and cons as in every classroom situation:

> *"I quite like working with different people, I think you end up understanding your work a lot more – you can discuss things with your group."*

> *"Our group worked well together, trying to understand each other's ideas. It helps to get an overall understanding of a topic."*

> and

> *"I think the workload ends up on one or two people in the group who are willing to work while the others tend to copy."*

"The group worked quite well although we didn't always complete work properly."

Comment is made elsewhere in this report on one class which was a very real challenge to a number of its teachers. The consultant followed this class through from the beginning of the programme to the end and then, in 1992, asked the teachers at the school how the class had made the transition to fourth form. In March of 1992, the teacher who had worked so hard with this class wrote a comment to the consultant:

> "[class] *from 1991 – a success story in lots of ways. Two thirds of their 1992 teachers have told me how much of a pleasure it is to teach them because of their good work skills and positive attitude. When I'm feeling overloaded I remember that! The strategies work!"*

The consultant checked these comments with the teachers involved and with the assistant principal at the school. Each of the teachers who had commented on the success of this class confirmed the comments cited above.

Toward the end of the duration of the programme, the teacher and this class decided to do their own evaluation of their work. The students supplied the teacher with a series of headings and the teacher invited them to rate the items on a five point scale. The ratings were then converted to percentages. The headings the students gave were: (a) pleasant (ie the environment and atmosphere within the classroom), (b) writing – sentences and paragraphs, (c) spelling, (d) independence (working on their own and their homework), (e) reading books, (f) comprehension (the paraphrasing strategy/RAP), and (g) social studies. The teacher added spelling to the list and the class then anonymously completed their questionnaire. The results of this rating are shown below:

TABLE 13

Student Rating of Value and Nature of Class Programme Items

Item	Rating %
Pleasant	76
Writing	80
Independence	80
Reading books	72
Comprehension/RAP	83
Social studies	86
Spelling	75

For a group of students who were never easy to teach and who found academic activities extremely challenging, these ratings indicate the value of the programme.

Finally, students find the same kind of satisfaction as researchers. A comment from one student on a paired, cooperative research assignment read as follows:

> *"I enjoyed doing this assignment, because it was done in pairs and we had plenty of time to do it in. I was also interested in this topic so I learnt quite a lot. The thing I least enjoyed was stuffing around doing the bibliography, trying to remember what order things went in. I also enjoyed displaying it and decorating it."*

SURVEY OF STUDENT BELIEFS AND PRACTICES

INTRODUCTION

At the end of the programme, students were asked to complete a questionnaire. The items of this questionnaire will be found with the definitions in appendix 3. This was aimed at finding out what students believed had been the nature of the programme, its benefits and any drawbacks they could identify.

Some questions tapped student awareness of the programme as "new ideas" in the classroom. These questions asked if students realised the teacher (ie the nominated teacher engaged in the programme with their class) was using a different approach and what particular strategies they had been aware of using. To check that students may have used other strategies in the course of the programme which did not derive from the project itself, students were invited to list additional "learning ideas" to which they may have been introduced during the two terms.

Another set of questions checked the use by students of strategies in class, for homework or for study toward examinations. One of these questions was aimed at student awareness of strategy use in other classes.

Since cooperative learning had been used by a number of teachers, a series of questions asked students for their views on this approach to teaching and learning. Citing work in groups and pairs, students were asked if they liked this form of class work, if they would like to use it in the future, what they liked most and least about the approach and to comment generally about working in groups.

DEVELOPMENT OF THE QUESTIONNAIRE

The questionnaire for students was compiled from a draft provided in the first instance by the author. The teachers in both schools commented upon the draft and made suggestions about alterations or additions. These changes were incorporated into the final questionnaire so that it reflected, as closely as possible, the nature of the work that had gone on across the two terms.

ADMINISTRATION OF THE QUESTIONNAIRE

The questionnaire was administered to each class by the teacher who took that class or another teacher who had been involved in the programme.

Prior to administering the questionnaire, teachers had agreed on an administrative procedure. This procedure had the teachers hand the papers to the students and invite them to complete it in silence. Questions on procedures and mechanical aspects of completion of the questionnaire were answered. Teachers chose not to offer any guidance on completion of the programme, but would answer questions, when asked, which explained any details strategies or other items on the questionnaire which a student required to complete the form properly.

The questionnaires were completed anonymously. Teachers instructed their classes that they were not to put their names on their papers unless they particularly wanted to do so. The students were told that the questionnaire results were important so that teachers would have a better understanding of ways in which they could assist students to do well in school. No effort would be made to identify any student. Indeed, since the questionnaire was administered at the end of the year, there would be little point in trying to do so.

Questionnaires were collected up as they were completed. The questionnaires were handed to the consultant, but teachers were free to read student comment before handing them in. No alterations were made by teachers to any of the questionnaires.

SCORING THE QUESTIONNAIRES

The questionnaires were collected together and examined by two people to establish scoring categories for the open-ended questions. Once agreement had been reached on the categories, items were individually scored and agreements and disagreements noted. The definitions for the categories will be found in appendix .

Reliability was established at the appropriate level (see the section on reliability).

ANALYSIS OF RESULTS

The results of the student questionnaire are set out below. In each case the question is noted first.

Question 1: "Your teacher has been using some new teaching ideas in the last year. Did you know that your teacher was doing this?"

TABLE 14

Student Recognition of Strategy Use by Teacher

School One %		School Two %		
Yes	No	Yes	No	Other
78	22	71	27	2

NOTE: "Other" is included for the sake of completeness.

While it can be seen that a significant majority of students in both schools realised that their teachers were using some new or different approaches, not all of them did so. Analysis class by class, reveals that in some cases 100% of students and in many other cases, virtually all students realised the teachers were involved in trialling different methods. In just a few cases, half or more of the students claimed not to be aware of what the teacher was doing.

In view of some of the results to follow, the most likely explanation, for at least some of the students, is that they did not regard the activities as new so far as the teacher was concerned. Certainly, some of these activities would have been new to the students, since there was no history of the use of some specific strategies in the school or in the contributing schools so far as the staff at the school or the author could ascertain.

Furthermore it is not clear if the students who replied "no" to this question were consistent. For example, in a class where 100% of students replied "yes", their rankings for recognition of individual strategies (see below) ranged from 80 to 100%. In a class where the majority replied "no", their recognition of individual strategies ranged from 56% to 100%. Their mean ranking was 85%.

It appears therefore that most students recognised that alternative programmes were being used. Among the ones who claimed not to recognise the use of these programmes, the majority of them were able to identify individual strategies when offered the choice from a list.

Question 2: "Some of you will have tried new ideas for learning this year. Tick the boxes of any you think you have tried."

This question was asked to see if students could identify the strategies that their teachers had been using. A cross-check on the use of the strategies can be obtained from the listing the teachers gave of the classes and the strategies they had used with them. The following results were obtained.

The strategies are arranged in the order of those developed by the Kansas University Institute for Learning Disabilities, those involving some kind of graphic or textual transformation, those which involve a form of re-teaching using known (but in this case carefully structured) programmes, and those which involve students in knowledge of their progress to motivate their interest in learning outcomes. Cooperative learning is shown on its own.

TABLE 15

Student Recognition of Individual Strategies Used by Teacher With Their Class

Strategy	School One %	School Two %
KUILD		
Advance organisers	38	41
RAP	15	6
COPS	9	4
Transformations		
Posters	67	48
Spider maps	55	71
Compare/contrast matrices	27	20
Paraphrasing	18	18
Re-teaching		
Flash cards	57	35
Spelling programmes	29	26
Motivational		
Pre and post testing	41	40
Progress charts	16	24
Cooperative learning	97	98

There were noticeable differences in recognised use amongst students, with the exception of cooperative learning which was almost universally nominated. To some extent this is a direct result of the use of the various strategies by teachers. A comparison of teacher use and student recognition is included elsewhere.

Question 3: "Write down any other learning ideas you have used for the first time this year."

Students were free to nominate any strategy they might have thought had been introduced during the period under study.

This question was included to try to ensure that students had not named a strategy in some other way, or had simply failed to recognise any strategy that was introduced. The question was also a check against the possibility that teachers had introduced strategies outside the programme which the students had recognised in particular.

No item received more than two nominations from either school except for one class at School One. In this case, almost the entire class nominated "flash cards in maths" and one student in the same class nominated the use of progress charts in maths. This class, which was using strategies intensively with another teacher had apparently felt that they should nominate strategy use for that teacher only. It is interesting they almost all recorded the use of flashcards as a separate item, a possible commentary on the issue of generalisation!

Question 4: "Did you use any of the new ideas to help with your homework or any school work you did at home?"

Question 4 was used to check whether students would use strategic approaches learnt in their classes, as a means of studying independently. Because the questionnaire was lengthy, it was decided not to ask the students to nominate which strategies they had used since this would probably be too onerous. Thus, while an estimate can be made of independent strategy use, it is not possible to say which strategies predominated.

TABLE 16

Student Independent Use of Strategies at Home

School	Used at Home %	No use Made at Home %
School 1	57	43
School 2	65	35

These results suggest that a significant proportion of students were becoming independent in the use of strategies.

In the majority of cases, junior classes (ie third and fourth form) showed a predominant willingness to use strategies independently at home, while sixth form classes showed a small majority not using strategies. At the the fifth form, the balance was more even, but some classes showed 100% or close to 100% usage of the strategies at home.

The tendency toward an unwillingness to develop independent use of the strategies at home among sixth formers was less evident in the next question.

Question 5: "Will you use any of the ideas to get ready for tests or exams?"

This question was asked to see if the independent use of strategies would be more likely under the stress of examination preparation. Since the questionnaire was administered just before examination time at the end of year, the greater urgency for some form of preparation was expected to have an influence.

TABLE 17

Student Independent Use of Strategies for Examination Preparation

School	Used at Home %	No Use Made at Home %	Other %
School 1	77	17	6
School 2	74	25	1

Though the choice was for yes or no, some students gave another form of answer. These were not common. No attempt was made to interpret these responses but they are noted for the sake of completeness. There is an obvious increase in the numbers of students who intend using strategies over those who report having used them for their homework. It is always possible that it is easier for students to state an intention than to report having used strategies. On the other hand, the urgency of examination preparation may well increase the likelihood that students would want to use new techniques which they had seen to be effective in their classroom activity.

An interesting development in that response is the trend upward even in classes where they had close to 100% student use.

Sixth form classes increased at about the same rate as others.

Question 5a: "Have you already used them?"

This question was a subset of the previous one and was aimed at checking whether or not student use for examinations was a more likely indicator than their stated intentions. Since the questionnaire was being used very close to examination time, it was thought that this question might more accurately pick up student behaviour.

TABLE 18

Student Independent Use of Strategies for Examination Preparation

School	Used at Home %	No use Made at Home %	Other %
School 1	57	38	5
School 2	63	37	0

A comparison with question 4 reveals almost identical figures. In other words, it is likely that the students have reported their actual behaviour more accurately than their future behaviour, perhaps showing their good intentions when predicting what they would do.

Since the results for question 4 and question 5a are almost identical it seems quite possible that we have a reasonably accurate figure of student use. If these figures are anything like an accurate reflection of use, then a majority of students had taken up the opportunity to use the strategies that they have been developing in their classrooms for independent use.

Question 6 "Have you used any of the ideas in other classes?"

This question was asked to see if students were generalising strategies in other classrooms.

TABLE 19

Student Generalisations of Strategy Use

School	Used %	Not Used %	Other %
School 1	54	41	5
School 2	68	32	0

NOTE: "Other" is included for the sake of completeness.

This question reveals that generalisation was quite high.

Question 7: "When you worked in groups or pairs (did) you
(a) help others to learn
(b) get help from others in the group
(c) try to make sure your group learned all the work as well as they could?"

This question was the first in a series on cooperative learning. It was aimed at checking some basic information on student activity in groups before asking the students some questions of opinion on preferences for working in cooperative groups.

TABLE 20

Student Perception of Their Behaviour in Cooperative Groups

School	Class of Behaviour (a) Give help %	(b) Get help %	(c) Group Responsibility %
School 1	56	67	67
School 2	59	74	54

(NOTE: Percentage totals more than 100)

It appears from these results that the students benefited at least as much from groups as they contributed.

An interesting commentary on the competitiveness of sixth and seventh formers is that in this group of senior students the percentages read 66%, 67% and 58% respectively. This suggests that these senior students gained a great deal from their group mates, were willing to assist their peers in a highly competitive environment and made a serious attempt to ensure that they all learned the work as well as they could.

Question 8: Did you like working in groups or pairs?"

Students were asked this question to check whether or not they enjoyed working in groups quite aside from whether they felt that they gained in their learning experiences. Three choices were given to get a distinction between those who enjoyed working in groups pretty much all the time versus those who liked to work in groups for some of the time.

TABLE 21

Student Preference for Working in Groups

School	Yes %	Sometimes %	No %	Other %
School 1	40	52	6	2
School 2	51	45	4	-

NOTE: "Other" is included for the sake of completeness.

Again, the sixth and seventh form results were taken out to see if there was a difference, given the highly competitive nature of these classes. The results for these senior classes were 60 - 40 - 0, indicating an even higher level of preference for group work than in the remainder of the classes.

What we have here seems to be a decided preference by students for working in groups at least some of the time, and for many of them quite a lot of the time.

Question 9: "Would you like to work in groups or pairs next year?"

This question was put in as a check against previous questions which might have indicated enjoyment or lack of it in a particular class setting. The question was aimed at tapping a more general attitude toward cooperative group work. It offered four choices to try and test as fully as possible the question of whether students found groups an effective way to work.

TABLE 22

Student Preference For Working in Groups in the Future

School	Yes a lot %	Yes sometimes %	Not much %	Not at all %	Other %
School 1	25	57	14	2	2
School 2	35	52	10	3	0

Again the results for the sixth and seventh forms were taken out. Their percentage preference scores were 39 - 54 - 6 - 1. Again, the senior school appears to be showing an equal if not higher preference for working in groups than the remainder of the classes.

Taken over all, there is a very strong preference (exceeding 80% in both cases) by students for working in cooperative groups some or a good deal of the time.

Question 10: "Do you normally like sharing ideas anyway?"

This question was a check against the possibility that students disliked sharing ideas – a major demand in cooperative groups.

TABLE 23

Student Preference for Sharing Ideas

School	Yes %	No %	Other %
School 1	79	16	5
School 2	81	14	5

Clearly students are willing to share ideas. Whether this is a product of the cooperative group work they had experienced over the previous two terms at least (many students had been involved in cooperative groups for close to two years) or whether it was a general preference in the school population it is impossible to say.

The figures are entirely consistent with the previous question showing a willingness of students to work in groups, a preference for doing so and a liking for the learning opportunities that cooperative groups provide.

Question 11: "What did you like most about groups or pairs?"

This open-ended question was asked to see if it was possible to establish the predominant advantages as students see them of working in cooperative groups.

Eleven categories were drawn out of the answers provided by students. The student responses are presented in rank order by school, and combined.

TABLE 24

Student Statements on What They Liked About Cooperative Groups

Categories	Rank order of preferences			
	Combined Schools	School 1	School 2	Forms 6 & 7
Sharing ideas	1	2	2	1
Working together	2	1	3	3
Enhances learning	3	3	1	8
Getting help from others	4	4=	4=	5=
Helping each other	5	4=	7	10=
Relationships	6	6	4=	4
Opportunity to discuss	7	8	6	2
Comfort	8	7	8	8=
Self-confidence	9	10	9=	10=
Giving help	10	11	9=	7
Inclusion	11	9	11	10=

Two interesting points emerge from these figures. The first is that the top three preferred aspects of cooperative group work – sharing ideas; working together in a cooperative, collaborative way; and the enhancement of learning – all scored significantly higher than any of the other items. For example, the highest scoring item in the combined schools was the sharing of ideas with 115 students registering this in particular. Ninety-nine students wrote in the notion that cooperative groups enhance learning. This last score was more than twice as high as the next rank order item.

It should be noted, however, that if the categories having to do with helping each other were combined, they would rank a close fourth behind the enhancement of learning with a combined score of 83 nominations. They have been separated here because the students nominated them in different ways.

It can be seen from the table that getting help was fourth ranked in both schools while the general category of helping each other ranked highly as well.

To give an impression of the ways students responded to the most nominated items the following examples are offered:

SHARING IDEAS

Sharing of ideas was particularly popular. One fifth former commented: "*It was good hearing different opinions. Every person's opinion allows you to look at the task with a different perspective.*"

A fifth form history student said: "*When talking in the group that I sit with, I found it beneficial, more sensible ideas were discussed.*"

WORKING TOGETHER COOPERATIVELY

A third former said: "*You got to know people better and how to cooperate*" while a fourth former said: "*There are twice as many brains being used.*"

ENHANCEMENT OF LEARNING/MOTIVATION

Some students could see how group work enhanced their learning opportunities. One fifth former said: "*Other people in the group were able to help me to better understand the topic. It helped also to be teaching other people because it helps me to remember a large amount of work.*"

A fourth former said: "*It made me try harder when doing a task*" while a fifth former said: "*It seemed to me to be an easier way to learn and helped us to interact with classmates more.*"

One student seemed to have quite an insight into cooperative learning when commenting: "*The skilled person helped others to learn ways of obtaining higher grades if we wanted to earn them*" and another fifth former: "*The higher ones learned to explain and realise what they were doing, and lower learned techniques.*"

For some students though, it just clarified the whole learning scene for them: *"Work just seems easier and I always know what I'm doing."*

HELPING

Helping featured very highly in the whole of the student responses. One third former said: *"I like the idea that everybody tried to help others."* A fifth former put it this way: *"It was helpful being in groups as we all helped one another to understand the work."*

A fourth former commented: *"Sometimes I might not know much about a topic – with groups and pairs everyone helps each other."* Another fourth former pointed out that: *"If you didn't understand something there was always someone in the group that did"*, or to put it another way: *"The brain people helped the not very brain people out."*

Some of the less highly ranked items revealed some interesting insights into student perceptions of cooperative group work. For example, one fourth former remarking on the improvement in self confidence she felt wrote: *"It makes you feel more confident about talking out loud"*, and on the matter of inclusion of all students, a fifth former said: *"Everybody has a say in the topic instead of getting left out."*

Some students saw the value of cooperative work not just in terms of the enhancement of learning but by establishing a cooperative relationship which extended across academic and social boundaries. For example one sixth former said: *"That everyone shared different ideas, held a view through a different angle, told us/me things I had never thought of. It is also a way to meet various people in the class and it is then easier to share ideas with the whole class, do drama in front of them. Can relate better to another student when needing to ask more questions."*

And another sixth former with similar insight said: *"Being able to get other people's ideas and then talking about the different ones. Changing them about to get a conclusion that suited all."*

Question 11a: "What did you like least about groups and pairs?"

This question was put in to get a balanced view about student perceptions of the way groups affected them.

TABLE 25

Rank Order of Student Statements on What They Like Least About Cooperative Groups

Categories	Combined Schools	School 1	School 2	Forms 6 & 7
Nothing	1	1	5	7=
Skills issues	2	2	2	2
Non-contributors	3	6=	1	1
Off-task behaviour	4	4	3=	4=
Incompatibility with other group members	5	5	3=	3
No answer given	6	3	10	10=
Negative effects of non-contributing group members	7	6=	7	4=
Other comments	8	6=	8=	7=
Less work gets done	9	10	8=	6
Loss of individual challenge and pace of work	10	11	6	12
Dominant individual	11	9	11=	7=
Reluctance to share information	12	12	11=	10=

Perhaps the most interesting result to come from this question is that one school and the combined data declared there to be nothing they disliked about cooperative groups. Given that one school ranked this category at fifth it is interesting to check the remaining most highly chosen categories. The first of these is the skills issues category. In this category responses reflect student inability to manage skilfully many of the issues and events that emerge in cooperative groups. It included problems caused by unfamiliarity with group activities, inability to manage conflict and lack of communication skills. It included such comments as, "*conflicting interests meant not everyone was satisfied with the results*" and "*sometimes I found it hard to keep up with others*". When students found it difficult to elicit cooperation from their group mates, they spoke about "*arguments about some questions*" and "*having to explain everything you do*".

The problem of non-contributors worried a number of students. One sixth former remarked "*some people couldn't be bothered contributing*". Another described them as "*when someone did not work or listen*".

The negative effect of non-contributors was less highly ranked than might perhaps be expected and students had a variety of concerns about it. For example, one fifth former remarked, "*often getting graded together is not fair for the people who don't do any work*" while another said "*when someone gave up it dragged the whole group down*".

Non-contributors probably also increased the concern about off-task behaviour. As one fifth former put it "*you sometimes talk too much and don't get on with your work*".

All these results have to be taken in the context of the relative weighting students gave to their preferences for cooperative groups. Much can be made of the concerns that students expressed. It is interesting that the highest ranking in School One and across the combined schools went to the category "Nothing". Furthermore, the categories which received the highest ratings for concern from students were all those that are entirely within the capacity of teachers to correct. Skills issues, for example, the behaviour of non-contributing students and the consequent off-task behaviour that comes in all probability from that are all entirely correctable.

To take this matter a step further, the least ranked item across the schools was a reluctance by the respondents themselves to share ideas, the effects of dominant individuals within the groups and any concern about loss of individuality, the challenge of working as an individual or the capacity to work at the student's own pace. The only item which ranked higher among sixth formers in these lesser categories was the possibility that less work would be done. Their greatest concern was the effect of non-contributors but it is interesting that in the competitive senior school, the loss of individual challenge was rated lowest by the sixth and seventh form students.

Examining individual papers it noted that on the one hand there was a concern for a loss of individual grades by one student while another claimed that the use of group grading for some of the work forced the students to work better together. One student gave a rather unusual answer. The response suggested that forming a bond with others in the group might be a disadvantage. Another student made the point that "*sometimes you had to cover for a group member when they were upset or something but they would do the same for me*". Why these examples should be cited by students for reasons that they might not like group activity is a little uncertain.

Question 11b: "Did they [cooperative groups] help you learn? (Say why)"

Whether or not students found groups to their liking, it was important to find out whether they felt the groups had enhanced their learning. To some extent this question was answered earlier in the questionnaire. Nonetheless, this could not be anticipated and the question offered a useful opportunity for students to say whether they thought the cooperative groups had indeed helped them to learn.

The responses were scored on a yes/no basis. Since this part of the question was closed some students wrote in a qualifier such as "maybe" or "sometimes", and these were scored accordingly. For the sake of completeness students who put in completely ambiguous responses have been categorised as "Other".

Again, for the sake of interest, the sixth and seventh form students have been abstracted from the school results to show their individual results after inclusion with their school. These results are shown because of the suggestion that for these senior students in a competitive examination environment the advantages of cooperation might be less evident.

TABLE 26

Student Perceptions of Whether Cooperative Learning Groups Helped Them to Learn

School	Yes %	No %	Maybe/Sometimes %	Other %
School 1	64	16	8	12
School 2	75	11	8	6
6th/7th form students	85	1	11	3

It is clear from these results the cooperative learning was seen as likely to enhance their learning rates. Senior students overwhelmingly supported cooperative learning with the vast majority saying that it did help them to learn and virtually all the remainder saying that it at least helped them sometimes. Only 1% of students claimed that cooperative learning did not help them to learn in the sixth or seventh form.

Students were also asked to say why they believed cooperative learning had or had not helped them to learn. Again, these data were collected from an open-ended question so that their student responses were categorised to find what it was they felt were the important elements in the learning environment. The following tables show the rank ordering of the reasons given.

TABLE 27

Rank Order of Student Perceptions of Why Cooperative Learning Helped Them to Learn

Categories	Combined Schools	School 1	School 2	6th & 7th form
Broadening of ideas and approaches	1	4	1	1
Collaboration skills improved work	2	1	2	2
Help available within group	3	2	3	4
Opportunity for discussion of work	4	3	4	5
Group work improved performance	5	6	5	3
Wider knowledge base in groups	6	7	6	6=
Other comments	7	5	7	6=
Benefits shared with peers	8	7=	8	6=

As with some of the other questions the rankings across schools and within the senior classes tended to cluster on the same items. The fact that cooperative groups allow students to improve their thinking and develop new approaches to their work through a broadening of ideas was an interesting first ranked response. Students made comments such as "*it helped me to do things in new ways that worked*" and as one third former put it "*it helped me to understand better*". Within this category came a number of responses from students who felt that the discussion among peers was more understandable than lecturing from their teachers. Quite a number of students responded that they could understand lesson material when it was transformed by their group mates into "their own language". This form of encoding and oral transformation is an interesting facet of the student responses.

When speaking of the way in which collaborative skills improved their work patterns, students made comments such as "*the group score method forced you to work well together*" and even "*the group would help in a nice way*". The students recognised that by sharing activities they could obtain notes from each other which would assist with their later study and one noted that "*the whole group suffers if you don't cooperate*". An interesting commentary on group motivation. Comments such as "*you can talk as equals*" also illustrated the value students found in collaborative activities.

Gaining help from others was important. Two fifth formers remarked, "*when incorrect your work can be corrected*" and "*you could always ask others*".

The opportunity for discussion was welcomed by many students. One fifth former said "*you could talk questions over and find answers as a group*" while another noted "*... got chances to talk about what I thought*". A fourth former remarked that comparing ideas led to more informed discussion. Improved performance was rated rather more highly by the senior students than by the others. Nonetheless, most students found improving their performance important to them. One fifth former wrote "*I increased my marks by 20% by being taught how to write essays by a group member*". Another remarked "*I remembered conversations in groups during exams*" clearly referring to the retrieval mechanism that cooperative groups offer. Another put it this way "*it associates topics with the person who taught it to you, in your memory*". Another fifth former felt that the group activity ensured more complete learning. He or she responded "*by making sure of complete understanding before moving to the next topic*".

The wider benefit to other students did not rate highly but was noted with some interest. One fifth former responded "*hi – lo achievers all benefited*".

Though by far the majority of students found that cooperative group work helped them to learn, some took the opportunity to remind us that we have not by any means perfected this approach. Very few responses were recorded by students indicating that cooperative learning had not assisted them (33 responses were counted against 284 responses indicating why cooperative learning groups assisted learning performance). It should be noted that some students simply replied yes or no to these questions.

TABLE 28

Rank Order of Student Perceptions of Why Cooperative Learning Did Not Help Them to Learn

Categories	Combined Schools	School 1	School 2	6th & 7th form
Preferred individual work	1	1	1	1*
Other group members off-task	2	2	3	-
Non-participation of other group members	3	3	2	-
Relationship difficulties with other group members	-	4	-	-
Confused by group work	-	5	-	-

* Only one student responded to this part of the questionnaire.

The very small number of students who responded to this element of the questionnaire reflects in part the fact that not many students felt that cooperative learning did not assist them to learn. It is also clear that very small numbers were involved, making ranking difficult anyway. One student in the sixth/seventh form group was sufficient to have the whole of the group involving 67 students entered on the table.

What is clear is that the uncertainty in working with others is a skill which needs further consideration and development. While it is clear that some students obviously do prefer to work on their own, some of those who entered this response also noted their relationship difficulties with other students. The most common response was reflected by a fourth former who simply said "*I could learn more on my own*". Another from the same class said "*not everyone participated*". One rather confused youngster said "*people talk too much, I couldn't understand*". Again, this comment reflects the need for all of us to work very carefully with students who are uncertain and ensure that the groups develop appropriately in assisting each other. It is evident that many students had developed these skills when one considers some of the responses to earlier questions.

Question 12: "How did you like the teacher deciding who would be in your group? Was it the best way to decide?"

This question required the students to consider the fact that many of their teachers (but by no means all of them) had chosen cooperative groups to ensure their heterogeneity. Some teachers had introduced simple sociograms to allow students to opt out of working with anyone with whom they found they were totally incompatible. Others, of course, had allowed students to choose for themselves.

For these reasons determining the categories of response included the need to ensure that all the various ways of bringing groups together could be accounted for. A "Didn't apply" category was used where students made it very clear that their teacher had permitted them to work in their self-chosen groups. This student response was verified against the teacher questionnaires and the author's own knowledge of the way teachers were working.

It was possible to do this since, while no student names were entered on the forms, the forms were returned in class lots and the class that each teacher had targeted could be identified.

TABLE 29

Student Views On Teacher Determination Of Groups

School	Responses				
	Agree	Disagree	Didn't apply	Didn't matter	Other/ no answer
	%	%	%	%	%
School 1	33	25	22	5	15
School 2	43	24	8	14	11

It can be seen from these results that not all students approve of their teacher selecting the groups. Nonetheless, more students approved than disapproved and some seemed quite indifferent to the matter.

Given the resistance many teachers speak of when it is suggested to them that cooperative groups usually work better when teachers select the groups for heterogeneity, these results are worth noting. Again, the reasons students gave for their preferences were categorised.

TABLE 30

Rank Order of Student Reasons for Supporting Teacher-chosen Groups

Category	Combined schools	School 1	School	6th & 7th forms
Better working environment	1	1	2	3=
Heterogeneity of the groups	2	2	1	1
Fairness of allocation to group	3	3	3	2
Efficiency of management	4		4	3=
Inclusion of all students	5	4	5	

Though the majority of students in the combined schools found a better working environment the most important reason why a teacher should select groups, this was not the case for the sixth formers and their responses weighted the results for School Two in the same direction. Heterogeneity of groups was regarded as important by all students, but sixth formers easily saw this as the most important element of their group work followed by fairness in itself. Fairness certainly was important to students in other classes with the remaining categories receiving only slight support.

Students clearly saw a better working environment as important to them. As one fourth former said "*it prevents gossip*" while another said "*the teacher chose sensible groups*".

Heterogeneity was also important to students in teacher selection. One fifth former said "*you get a wide range of people*" while a sixth former described it as "*balanced groups with mixed abilities*". A fourth former said "*it helps you to see what others think – you meet new people*" and a fifth former remarked "*it's taught you to get on with new people*".

Many students described teacher selection as "fair" though this category included students who agreed it was best even though they didn't prefer it. This was different to students who claimed it was not best but that it worked. Fairness was also used as the category for students who agreed that the teacher should select provided account was taken of particular incompatibility between one or two students.

Finally, the category of inclusiveness, though it was not used often, produced some interesting comments. One fifth former commented "*sometimes I got left out otherwise*" and another fifth former from a different class said "*unpopular kids wouldn't get a fair go*".

TABLE 31

Rank Order of Student Reasons For Not Supporting Teacher-chosen Groups

Category	Combined schools	School 1	School 2	6th & 7th forms
Homogeneity of the groups	1	1	1	1
Disagreement (but with reservations)	2	2	2	-
Effect of non-participants	3	3	-	-
Not an effective method	4	4	3	-

The vast majority of the responses for disagreement with teacher-chosen groups came in the desire to have homogeneous groupings. Typical responses from students were "*it's sometimes better with people you know will work*" and "*if you don't like someone, it's hard to cooperate*".

As the table shows not all the remaining categories were scored by the various groups. Some students accepted student selection of groups but with reservations. These responses were scored as disapproving of teacher selection but as one fourth former replied when s/he was asked if s/he approved of teacher selection replied "*no but it worked*".

A total of only five responses covered the remaining two categories.

Question 13: "Would you like your teacher to use more ideas which help you to learn and do better in school?"

This question was inserted simply to check whether the students felt they had been imposed upon by their teacher's working on a number of programmes which were new or relatively new to them. While it was expected that the students would largely agree that their teachers should be doing this kind of thing, it was not taken as a foregone conclusion. To prove that point, 8% in each school replied "no". In School One 79% and in School Two 87% responded "yes" and the remainder of responses were ambiguous.

Question 14: "Do you think you have done better this year by using any of these new ideas?"

This is extremely subjective and asks an opinion of students which may not accurately reflect what has been happening, it was seen as an opportunity to get some form of opinion from students on how well the programme might have assisted them.

TABLE 32

Student Views on Whether They Had Done Better by Using Programme Strategies

School	Yes	No	Not Applicable	Ambivalent Response
	%	%	%	%
School 1	55	28	5	12
School 2	73	19		7

It would be reasonable to conclude that the students felt that they had indeed gained some benefit from the programme.

Question 15: "Have you felt any better about your work this year?"

This final question was an attempt to see whether the students had any affective responses to working on the programme. Though it could just as easily have reflected some other influence the opportunity to ask the question was taken rather than left.

TABLE 33

Student Perceptions of Improved Effect During the Programme Period

School	Felt better	Felt no better	Not Applicable	Ambiguous Response
	%	%	%	%
School 1	57	29	4	10
School 2	67	24	9	

These responses match almost exactly those for question 14 above and seem, like that question, to indicate some feeling among students that they have gained something from working in classrooms where teachers have attempted to build a strategic environment.

For both questions 14 and 15 sixth and seventh form responses are slightly below those of the other students.

PERCEPTIONS OF THE PRINCIPALS

SURVEY OF PRINCIPALS' BELIEFS AND PRACTICES

INTRODUCTION

The principals' group was defined as the three people in each school holding the positions of principal, deputy principal and assistant principal. These "top three" as they are known in the schools were regarded by the consultant as essential to the success of the programme.

It was decided to interview the principals before the programme began and at its conclusion. In order to obtain the best possible information, the principals were not asked to complete a questionnaire, but to answer a series of questions put to them in a face to face interview which was tape recorded. The questions put to the principals at the initial and concluding interviews will be found in the appendices.

The tape recorded interviews were analysed, question by question, and responses categorised in order to reduce the data to a manageable level. Details of the categories will be found in the appendices.

Because only six people were involved in these interviews, there is a wide range of comment and, consequently, a large number of categories.

Since the questions sometimes involved the same wording, or a change of tense, some of the responses for initial and concluding interviews have been brought together in the tables that follow. Where a question was different to those posed in the initial interview, these data are presented separately.

Some questions asked of the principals' group were identical to those asked of the teachers. These questions were asked in order that any difference that classroom teachers might have which the principals' group did not share would be made apparent. Since the number of responses was very high, it is not possible to offer a wide range of examples of commentary on each of the questions.

ANALYSIS OF RESULTS

The tables are set out to show initial and concluding interview data. Where the questions were the same or similar, initial interview categories are shown first followed by concluding interview categories. In some cases, the initial categories fit both events.

Question 1: "What aroused your interest in the project?"
"What maintained your interest in the project?"

TABLE 34

Principals' Group Responses to Interest in the Project

Response	Interview: Initial	Interview: Concluding
Staff involvement	2	
Compatability of ideas	2	
Consultant credibility	2	
Relevant proposals	3	
1990 activities	2	
Professional development	2	
Feedback from staff		5
Programme continuity		2
Personal satisfaction		2
Staff support		3
Observed success		2
Programme validity		2

Question 2: "What factors do you think will have an importance influence on the development of the programme?"
"What factors do you think have had an importance on the development of the programme?"

TABLE 35

Factors Identified by Principals as Having an Importance Influence on the Programme

Response	Interview	
	Initial	Concluding
Present and sell it well	1	
Maintain momentum	3	
Top three encourage and support	2	
Feedback/liaison	1	
Student/parent support	1	
Teacher sustained enthusiasm	2	
1990 role models	1	
Consultant available on regular basis	2	
Style of programme	1	
Staff involvement		3
Staff development		2
Continuous commitment		3
Consultant valued		4
Positive student response		2

Question 3: "What strategies did you use to interest and involve the staff?"

TABLE 36

Principal Actions to Interest and Involve Staff

Response	Interview Initial	Interview Concluding
1990 programme success	6	1
Confidence in staff supporting the programme	3	
Saw genuine value in programme	4	1
Opportunity to work with another school	1	
Supported and encouraged teachers	2	5
Active recruitment	1	
Cooperative management		1
Established training opportunity		3

Question 4: "How do you perceive your role in this project?"
"How did you perceive your role in this project?"

TABLE 37

Principals' Group Perception of Their Role

Response	Interview Initial	Interview Concluding
Support of staff	3	3
Liaison	3	
Facilitate/motivate/maintain	3	4
Personal involvement	2	
No personal involvement	2	3

Question 5: "What events and factors that you can identify occurred as the 1990 programme developed? What were the effects of these things?"
"What events and factors that you can identify occurred as the 1991 programme developed? What were the effects of these things?"

TABLE 38

Significant Events and Factors Identified by Principals Which Affected the Programme

Response	Interview: Initial	Interview: Concluding
Catches staff interest	2	
Enthusiasm/achievement/ownership	4	4
Flow over to other staff	4	
Local publicity	2	3
Reports of improved classwork	2	2
Consultant credibility	1	2
Developing self sufficiency	2	1
Group bonding		3
Other staff interest		2
Professional development		2
Cross curriculum activities		2
Forward planning		1

Question 6: "What were the sources of pressure and support for you?"

TABLE 39

Sources of Pressure and Support Identified by the Principals' Group

Response	Interview	
	Initial	Concluding
Pressure		
"One more change"	1	
Time constraints	2	1
Direction	1	
Little or none	3	5
Administration	1	
Lack of personal involvement in teaching	1	1
Support		
Positive staff reaction	5	5
Senior staff enthusiastic	1	1
Programme credibility	2	2
Collegial support	3	1
Forward planning		2
Group bonding		1

Question 7: "How will you use new knowledge that emerges from the programme?"

TABLE 40

Proposed Use of New Knowledge by Principals

Response	Interview	
	Initial	Concluding
Disseminate results	3	2
Demonstrate progress to others	2	2
Improve school structure including staff development and class arrangements	4	
Improve instructional leadership	2	2
Improve own skills	2	1
Forward planning		4

Question 8: "What do you see to be your role in staff development?"

TABLE 41

Principals' Group Role in Staff Development

Response	Interview	
	Initial	Concluding
Ensure integration to school programme	1	
Become involved in the programme (or remain so)	2	
Encourage staff in professional development	4	5
Encourage teaching strategies	2	
Planning and coordinating	2	
Ensuring good development models are in place	1	2
Forward planning		5

Question 9: "What do you expect the school to get out of this project?"

TABLE 42

Principals' Group Perception of Outcomes For Their School

Response	Interview Initial	Concluding
Individual students achieve better	3	4
Students get better deal	5	3
Success acknowledged in community	2	4
More competent/confident teachers	3	2
Examination results improve in long term	1	1
Important step in continuous development	1	
Improved staff morale		3
Attract staff to the school		1

Question 10: "How do you see the structures of your school organisation being supportive of teachers in a development project? Will there be a need for any additional support structures?"

TABLE 43

Principals' Views on Need to Support Through School Structures

Responses	Interview Initial	Concluding
Provide resources	5	
Top three support staff	1	1
Greater across curriculum activity	2	
Good support already exists	2	
The project is self sufficient	1	2
Future planning		4
Staff organisation		3
Specific support needed		4

Question 11: "To what extent do you believe that collegial management of this development programme (or indeed any innovation) is desirable or possible?"
"To what extent do you believe that collegial management of this development programme was desirable or possible?"

TABLE 44

Principals' Views of Collegial Management of a Development Programme

Response	Interview Initial	Interview Concluding
Yes it is possible	6	6
Collaborative development works	4	
Mixture of direction and collaboration required	2	
Cooperation demanded by the model	5	6

Note that the following questions have been taken out of the order of the question of the questionnaire for the sake of continuity.

Question 12: "What have been the most noticeable changes resulting from the programme?"

TABLE 45

Principals' Group Views on Changes Resulting From the Programme

Response	Interview Concluding
Increased commitment from staff	4
Positive change in school climate	1
Greater focus on learning and teaching	5
Supported greater innovation and development	2
Assisted students	2

Question 13: "What administrative structures might need altering to ensure a continuance of a strategic approach within the school?"

TABLE 46

Principals' Group Views on Administrative Structures to Ensure Continuance of a Strategic Approach

Response	Interview Concluding
Top three involvement	3
A leader/coordinator	2
Provision of support from consultant	2
No substantial changes needed	1

Question 14: "If you were starting this project again, what would you do differently?"

TABLE 47

Principals' Group Retrospective View on Programme Requirements

Response	Interview Concluding
No substantial changes	4
Peer observation	1
Consultant introduction	1
Continuity	1
Inclusion of other staff	1

Question 15:
"What is the value of an outside consultant to a school, and can you compare that to a support teacher within the school?"

TABLE 48

Principals' Group Views on the Need For a Consultant

Response	Interview Concluding
Needs consultant	6
Needs liaison	2
Support teacher inappropriate	4

Question 16: "As staff training, how valuable is it to have regular visits or contacts with teachers from a consultant or professional developer?"

TABLE 49

Principals' Group Views on Contact with Consultant or Professional Developer

Response	Interview Concluding
Essential/important	5
Time - frequency of contact	4
Regularity crucial	2
Diaries essential	1

Question 17: "What are the three most important things you do as a principal?"

TABLE 50

Principals' Groups View of Their Most Important Functions

Response	Interview	
	Initial	Concluding
Relationship building and maintenance	5	3
Management tasks	3	4
Programme leadership	6	3
Public relations	2	0
Create and maintain positive environment	2	2
Role model and involvement with students	1	1
Support to staff		1

The remaining questions were identical to questions 5, 6 and 7 in the teacher questionnaire. These questions asked the principals' group to consider the three most valuable skills a teacher possessed, the three most important characteristics of a successful teacher, and the three most important contributing factors to student failure.

Question 18: "What do you consider to be the three most valuable skills in a teacher?"

The responses from the teachers showed no apparently significant movements. For the principals, however, while all other factors remained stable, there was a strong trend toward teaching strategies with the responses increasing from one member of the group of six to four.

Question 19: "What are the three most important characteristics of a successful teacher?"

When the teachers were asked this question they showed a decided trend away from the importance of relationships with students and a similar trend in favour of the importance of management skills in the classroom. The principals, on the other hand, increased the importance they placed upon sound relationships with students (three of the group registered this item in the initial interview, and all six noted it in the concluding interview). A new item appeared in the concluding interview which could be titled commitment.

Nobody had raised this in the initial interview, but half the group raised it in the concluding interview. Though half the group emphasized sound communication and good management skills in the initial interview, none of the principals' group registered these items in the concluding interview.

Question 20: "When students fail to achieve academic success, what are the three most important contributing factors?"

When the teachers were asked this question, they showed a marked trend in favour of management skills at the post questionnaire, and a similar drop in references to family and peer influences. The principals' group showed a slight drop in their references to family and peer influences, but maintained an extremely high level (five out of six in both cases) of references to teaching strategies at the initial and concluding interview. The principals' group also reduced their references to learning strategies between the two interviews.

COMMENT ON PRINCIPAL GROUP INTERVIEW RESULTS

It was noted above that the small numbers in this group and the wide range and diversity of answers to the questions, including interactive discussion, was a characteristic of the data. As a consequence, only on some occasions was there any particular concentration of responses which could be seen to come under the one category. A good example of this scatter can be seen in the responses to the first question. Clearly a number of issues aroused the interest of the principals' group, but at the conclusion of the programme they acted upon the feedback they had received from staff as a critical issue in maintaining their interest. Five out of the six members of the group reported under this category. It is interesting that the remaining sixth person, who was peripherally engaged with the programme but not closely involved in it, responded in terms of personal satisfaction and the validity of the programme in that person's eyes.

Because of the wide range of responses, only some questions yielded a heavy concentration of opinion, or demonstrated any significant change in responding. In some cases, the failure to comment at either the initial or the concluding interview does not necessarily represent a change of opinion, or a lack of one, initially. It is probably a function of what the principals had on their mind, or the direction that the interview took. Some of the more notable responses are commented on in the following paragraphs.

Question 3 asks the group what actions they took to interest their staff and involve them in the 1991 programme. All six responded that they cited the success of the 1990 programme when they spoke with staff, but only one said that they had engaged in active recruitment. This is an interesting commentary since the whole purpose of the programme was to work with staff on a voluntary basis, drawing in those most interested and allowing them to act as commentators to their colleagues on the value (or lack of it should that have been the case) of what they were doing.

In the same question, the concluding interview yielded all six principals commenting on the fact that they supported and encouraged staff who were in the programme across the two terms. (This is reflected too in question 4.) There was less emphasis on the value of the programme in the concluding interview, with the numbers dropping from four responding in this way to one. This is probably because the programme had reached its end for the year. Three of the six in the group saw the programme as being an important training opportunity.

In question 5, probing the events and factors which occurred as the programme developed, two thirds of the group noted the enthusiasm, sense of achievement and sense of ownership which teachers had felt as the programme proceeded. The number of the group who responded in this way remained the same across the initial and concluding interview, but all six cited this phenomenon at one interview or the other, with two of them mentioning it on both occasions.

Question 6 yielded an interesting response to the issue of pressure. Time appears to have been an issue for some members of the group, but at the initial interview three of the group said that there was little or no pressure upon them resulting from the introduction of the programme, and at the concluding interview five of the six said the same thing. The support that the principals' group drew from the programme came largely from the positive reaction of staff. Five out of the six members of the group made this observation at the initial interview, and five again at the concluding interview. All six members of the group made this remark on at least one occasion (which means four of them said it both times).

Questions 7, 8 and 10 showed that a significant number of the group saw the opportunity for forward planning emerging from the programme. Elsewhere in this report comment is made on the fact that staff met at the end of the school year to plan carefully how they would maintain the programme once the project was terminated. Question 8 asked the principals' group to consider their role in staff development. At both initial and concluding interviews, the group saw themselves as having an important role in encouraging professional development.

Question 11 asked the principals' group if they believed collegial management was desirable or possible when introducing or maintaining a staff development programme. All of them believed that it was desirable and possible at both initial and concluding interviews. At the initial interview, five of the group said that cooperation and interdependence was needed, indeed that the model that emerged in 1990 and which was proposed for 1991 demanded that kind of approach. At the concluding interview all six offered this comment. At the initial interview two of the group said that a mixture of direction as well as collaboration was necessary, but none of them raised this point at the concluding interview. Again at the initial interview, a number of remarks were made about why cooperation and a collaborative approach works. No one noted these points at the concluding interview.

Question 12 shows a very real focus from the principals on learning and teaching and upon commitment by the staff. It would be the author's view that the staff showed a very high level of commitment throughout this programme, including the initial stages. It may well be that that opinion was shared by the principals, since there was no way of comparing the response to previous views. Nevertheless, the principals recognised the depth of commitment from staff which is of interest when considering the comments noted in question 6. Positive staff reaction was seen as a strong source of support by the principals.

The responses to question 13 show a considerable recognition by principals that their own involvement is important, together with the need for a teacher to coordinate the programme from within the school. Equal weight was given to the need for a consultant or other support person.

This last point is picked up again in questions 15 and 16. Very strong support was given for the use of an outside consultant – this support was regarded as important or even essential and the regularity and frequency of vists was stressed. Equal support was given to weekly and fortnightly contact. The use of a support teacher was not preferred for a number of reasons, but their involvement as a liaison or co-worker was seen as desirable, provided it did not preclude the availability of the consultant.

Question 14 is a significant vindication of the organisational structure established for the programme. It is clear that the arrangements made were seen by the principals as appropriate.

The last question that was common to the principals' group only, asked them about their role. No real changes occurred in their responses to this question, except that while the whole group had described themselves as having an important role in programme leadership, only half of them said so at the concluding interview. It is difficult to interpret this response, and as noted above a failure to nominate an issue does not necessarily represent a change in thinking or behaviour. It is possible, though, that the group was even more familiar with the collegial and collaborative approach which was a feature of the programme and that they saw less need to identify this issue.

The remaining questions were common to the teachers and the principals. Question 18 asked the principals their views on the skills they regarded as valuable for teachers to possess. While the teachers showed no great changes in this area of belief, the principals' group increased the frequency of their comments on teaching strategies from one person to four of them emphasizing this point.

In question 19, they were asked what they believed to be the three most important characteristics of a successful teacher. In complete contrast to the teachers who moved away from the importance of personal relationships with the students toward the importance of management skills and their motivational skills, the principals increased the importance that they placed upon relationships, with all six of them nominating this characteristic. Again, while the teachers increased their emphasis upon management skills, the principals chose not to comment at all on this point. Likewise, a similar trend occurred with commentary on communication skills, where half the group had raised this matter at the

initial interview but none of them commented on it at the concluding interview. There was an increase from two to four of the group commenting on the importance of professional development and maintaining teaching skills at a high level, and a new issue was raised at the concluding interview with half of the group nominating the importance of commitment by teachers.

Question 20 asked about the contributing factors to student academic failure. Here, the principals' group were in no doubt that teaching strategies were important with five of the six citing it on both occasions, and one of them placing further emphasis by nominating it more than once. There was a reduction in the number of comments about learning strategies. It appears that while initially four of the principals' group believed that poor learning strategies were a contributing cause to academic failure, only one nominated this as a cause at the concluding interview. Whether this reflected a greater emphasis upon the teacher's responsibility is not clear. While teachers moved dramatically away from nominating family and peer influence, the principals also reduced these nominations but perhaps not quite so much. The principals also reduced the number of comments they made about ability and intelligence as contributors to academic failure. As question 9 showed, however, principals were looking to improvements in student achievement through the programme.

A major issue to arise in the comments of the principals and from the teachers was the issue of a consultant from outside the school rather than a support person from within working the programme. The comments from all who remarked on this point indicated that the ideal would be to have both. However, the choice favoured a consultant, for a number of reasons.

The first reason was the issue of knowledge base and expertise. The author, as consultant to this programme, came to the work with a long history of study and application in the area. There are many educators in New Zealand with a knowledge of these elements of the teaching-learning process and with the collaborative consulting skills to carry out the work. The question is, where do they presently work? Do support teachers have these skills? According to the study by Glynn and his colleagues (Glynn, Moore, Gold & Sheldon, 1992), and the preliminary reports which preceeded the major one, support teachers do not have the knowledge base or the background across the wide range of study necessary for the task.

The second reason was the freedom from administrative constraints. An outside consultant was seen as independent of the school, not at risk of being asked to act on some emergent issue unconnected with the work.

A consultant was also seen as having access to outside information not easily available to schools and teachers. It seems to be a consistent and long-standing problem for schools that they do not have easy access to current literature, nor to anyone who can report and/or interpret it for them. Support teachers are no different from their classroom colleagues in this respect.

The issue of training and how expertise is delivered was not raised, but is a clear corollary of the reasons given for preferring a consultant. Glynn and his colleagues have noted the training demands for support teachers. It is clear that with this model, some element of consultant resource is required to support the support teachers. In effect, two people are required for the work to be done.

Furthermore, the delivery of new or reconsidered information is indirect. The consultant does not have direct access to the teachers, nor does s/he get the direct feedback the teachers can offer. One element of the present study was the high level of interaction directly between the consultant and the teachers. The teachers expressed strong support for continued access to a consultant who was a direct source of information and collaborative decision-making.

Taken together, these reports, across the board and strongly put by many teachers and principals, suggest that a consultant from outside the school is the preferred way of delivering advice and development opportunities to schools.

FURTHER TEACHER DEVELOPMENT OPPORTUNITIES EMANATING FROM THIS PROGRAMME

One test of the efficacy of the programme and its validity in the eyes of the teaching community would be the willingness of other teachers to join in professional development opportunities that emerged consequent upon the programme.

The author became aware of a highly sophisticated and widespread network of communication among schools, particularly between the principals' groups on this subject. This network is more than regionally based since enquiries about the programme were generated from quite distant regions in both islands.

Since the preliminary activities during 1990 were the basis on which the two schools programme was developed, some of the professional development opportunities that could be said to emerge from the programme began in 1990. Table 51 shows the number of teachers, the number of schools and the nature of the programmes which developed during 1990 through 1992 and which are projected for 1993.

Some further indication of the credibility teachers attach to this form of professional development can be taken from their willingness to return to development programmes once they have received this kind of training experience. A measure was taken of the number of teachers who enrolled for further professional development opportunities having first participated in one part of the programme.

The first step was to calculate the number of teachers at the two schools selected for the 1991 programme who had already participated in one form or another in the preliminary 1990 programme. Analysis of the teacher questionnaire data showed that all teachers who worked with the author in the 1990 pilot programme joined the 1991 development programme.

The next step was to calculate the number of teachers involved in the 1991 programme who took an opportunity to join any other form of teaching/learning training programme involving the development of strategic classrooms and cooperative learning methods. In so far as it was possible to obtain the information, no other programmes were being offered within the region on these topics except those by the author.

It should be noted that while Wellington College of Education had taken the decision to establish a credentialled course under the development programme of the School of Special Education, based on the author's work, this programme was established only for the Wellington area. The programme was restricted to two teachers per school and reached only as far out as School Two in the 1991 programme. This precluded School One from entering staff into the course.

School One entered two teachers to the course. Staff at School Two approached the College of Education through their principal to see if a similar course could be run within their district. While it was not possible for the college to run a 100 hour course, a 50 hour course was offered. This course had to be run in the evenings and course fees were required to be paid by teachers. Of the 20 teachers at School One who had taken part in the 1991 programme, 12 enrolled in this evening course and ten completed the course. In addition, four teachers at School Two enrolled for the course though it was out of their district. Three completed the course, the other withdrew for health reasons. Staff at School Two had had little opportunity to take a further professional development course, because they were not able to attend the course in Wellington City, or the travel demands were considered too great to travel out of district to an evening course. This group of teachers has applied to the Wellington College of Education for a 50 hour credentialled course to be run within their own district during 1993. To date there are 20 teachers tentatively enrolled for this course. The course will be run in the evenings and a course fee will be required.

A final measure of teacher interest in strategic classroom professional development can be taken from the evaluation ratings teachers are asked to complete at the end of all courses. Taken across courses lasting half a day up to those running for 25 weeks ratings for relevance of material to the work of the teachers consistently exceeded 90% across the three years.

TABLE 51

Staff Development Activities Generated by the Programme

Year	No of Schools	No of Teachers	Programme Details	Organisation
1991	8	20	40 hours (certificated)	Wellington College of Education (at Wellington)
	22	44	12 hours (certificated)	Wellington Teacher Support Services
	1	all staff	12 hours (staff development)	High School I
1992	26	46	12 hours (certificated)	Wellington Teacher Support Services
	14	24	100 hours (credentialled)	Wellington College of Education (at Wellington)
	5	16	50 hours (credentialled)	Wellington College of Education (at Horowhenua)
	5	22	36 hours (certificated)	Palmerston North College of Education (at Hawkes Bay)
	7	24	12 hours (certificated)	Palmerston North College of Education (at Wanganui)
	5	24	12 hours (staff development)	Nelson High Schools
	-	12	6 hours (staff seminar)	Wellington College of Education
	-	26	24 hours (staff orientation)	Wellington Teacher Support Services
	1	28	year long) (consultation) (half day per week	High School II
	1	all staff	(staff development)	9 hours High School III
	1	all staff	(staff development)	6 hours High School IV (Hamilton)

Year	No Of Schools	No Of Teachers	Programme Details	Organisation
1992	1	12	12 hours orientation (for 1993 consultation)	High School V (Palmerston North)
	1	all staff	(staff development)	6 hours High School VI
	1	all staff	(staff development)	6 hours High School VII
	1	all staff	(staff development)	3 hours High School VIII
	1	all staff	(staff development)	2 hours High School IX
	1	4	3 hours (staff development)	High School X
	8	18	3 hours (staff development)	Catholic Schools Support Services
enrolled to date for 1993				
1993	10	16	100 hours (credentialled)	Wellington College of Education
	11	82	36 hours) (certificated	Palmerston North College of Education (at Hawkes Bay)
	2 +	20 +	50hours (credentialled)	Wellington College of Education (at Horowhenua)
	6	15 +	36 hours (certificated)	Palmerston North College of Education (at Palmerston North)
	6	15 +	36 hours (certificated)	Palmerston North College of Education (at Wanganui)
	6	5	36 hours (certificated)	(at Nelson)
	1	12	20 weeks (consultation)	Palmerston North

THE ECONOMICS OF FURTHER DEVELOPMENT

One of the research questions required an analysis of the cost of development of this programme into other secondary schools. There are a number of issues associated with the development of the programme. Each of these would have a bearing upon the future expansion of the programme.

The first issue is the personnel involved as a consultant to the school and its staff. In this project the author acted as the consultant to the two schools. The author is a trained teacher, a registered and experienced psychologist, an experienced administrator and has held a senior lectureship at a New Zealand university. The author's personal study of strategic classroom environments, particularly where they relate to less proficient learners extended over a number of years and included personal visits to many of the research and training institutions in this field.

Setting aside the particular qualifications of this consultant, the question arises of what kind of background and skills should such a person have.

Some guidance may be taken from the nature of the task and the time it has taken for teachers to develop expertise in strategy use. At present one of the principals' group and one teacher from the two schools has begun to deliver seminars in the use of cooperative learning, and three teachers, including this one, have worked with the author at inservice programmes. All three of these teachers continue to seek further development opportunities with the author in credentialled programmes.

The task requires three essential skills. The first is an understanding of and skill in collaborative consultation. The second is a broad knowledge of strategic approaches to teaching and learning and a knowledge of how to deliver these strategies in a range of subject areas and classrooms. The third is a capacity to stay abreast of the literature, to know how to interpret this literature to colleagues in the classroom and to work cooperatively in adapting them to the New Zealand educational scene.

A further issue is the question of whether the consultant should be a person from outside the school or one from within the schools staff, acting as a resource teacher, support teacher or consultant adviser. The option of in-school support staff has been explored elsewhere (Glynn, Moore, Gold & Sheldon, 1992). Their findings raise some concerns in this context. Some of these concerns might readily have been identified within the two schools themselves.

The first concern is the issue of behavioural drift (Moore, Glynn & Gold, in press). There is evidence from the study of support teams of a rapid movement away from the original model of support teachers. The trend to move away from working collaboratively with teachers toward withdrawal of individual students, or, at best, working with individual students in the classroom should be noted. This was particularly the case in secondary schools and where professional backup was not intensive.

Given the need to support the support teachers, an issue of cost has to be the double funding of the support activity.

A further concern must be the level of training required for support teachers. Analysis of the training programme in the study of support teams by Glynn, Moore, Gold and Sheldon (1992) suggests that many of the training activities were not at a complex level. They related to basic skills and suggest that the teachers would require considerable additional training to reach an autonomous level of consulting skill.

Since the teachers and principals at the two schools frequently and in different situations noted the importance of consultant credibility, this must be a matter for serious consideration. If the development of strategic classroom environments were to proceed beyond the two schools (and those which have since sought the advice of the consultant), personnel involved as consultants would have to win the confidence of the staff for the programmes to succeed.

A second issue is the views of teachers and principals on whether the consultant should be drawn from within the staff or come from outside the school. The general view of both groups was that the consultant should come from outside. This was not to deny the suggestion that both would be welcome but the preference was clear. In addition, some of the respondents to this question were more than aware of the potential for a staff member to be captured by other demands within the school. Indeed, the teachers appeared to see the support teacher as really little different to themselves in skills, but with a somewhat different role. This role appears to have been seen as substantially different from that of the consultant.

A final point might be found within the nature of the schools themselves. As a profession, teaching is recognised as being poorly served in the supply of up to date professional information. A point raised often by teachers and principals alike was that they had little or no access to up to date research or development information.

During the course of the project a consultant teacher from the United States spent some time working with the author and met with the staff of both schools at a regular weekly meeting. This teacher held a masters degree as a specialist qualification. Her training, therefore, placed her somewhere between the level of a regular teacher and a psychologist in the New Zealand education system. This may give some guidance to what might be required.

Essentially, the role of the consultant for the development of teaching-learning programmes is significantly different from that of a support teacher. The skills required would not be acquired through apprenticeship. Study at a post diploma level by experienced teachers with good qualifications would be needed. The author has already seen teachers developing some of these skills in the credentialled courses which have emerged from this study, associated with Wellington College of Education. Four purpose-designed, 50 hour papers which could be taken part time over one to two years at this college or any similar training institution would meet the demands this study has revealed and which appear in the literature.

The question of how often a consultant should be available to schools was asked of the teachers and principals. The general view was that once a week was ideal but that once a fortnight, perhaps for only half a day, would be appropriate after the initial programme had begun. The author's experience with a number of other schools suggests that, once a school has established a programme, this would probably be about the right level of contact.

Given that this report concerns the development of a novel programme, it is likely that the consultant put in more time than might be the case in a more routine activity. Nevertheless, each school required one day of work and a further day each week of preparation, sometimes more.

Since the school visits ceased at the end of 1991, the consultant has been engaged with a number of schools and other tertiary teacher development programmes. The general time commitment to each day of school work, or seminar activity has been a one for one relationship. For the author this has meant the rationing of time over a consultancy week. The translation of such a workload to a salaried position is not clear.

An alternative, of course, would be to contract consultancy time from private sector consultants on a contestible basis with existing agencies.

If the consultant were to work with a number of schools on such a basis, the likely "load" of schools would be about eight or nine. This would allow fortnightly visits to some schools for half a day, weekly visits to others for a day and preparation and travel time (travel is an issue where schools are some distance apart).

On this model the consultant deals directly with teachers engaged in the programme. The consultant is not expected to train or support an intermediary (who is salaried and therefore must be taken into account with respect to costs). Furthermore, the consultant is actively engaged fully on the task. The task is clearly defined and the activities of the consultant visible and transparent. The full working day the consultant established means that teachers have a resource available to them virtually from the time the school opens until it closes in the late afternoon. The cost effectiveness of this approach would need to be contrasted with less direct or less fully task oriented personnel.

DISCUSSION

This study has been concerned with the delivery of strategies for teaching and learning and the establishment of strategic classroom environments. Deshler and Lenz (1989) identify a key assumption underlining the strategies instructional approach as:

> *"That the educational experience should emphasize teaching students the process of learning as well as teaching them specific domains of content information. ..... In short, the strategies instructional approach is seen as a way by which teachers select, deliver, and organise curriculum such that learning is facilitated."* (p 205)

Deshler and Lenz argue that there is no clear agreement yet on the best delivery of strategic interventions. It may be that the delivery of intervention is not the best way to conceptualise the matter. Perhaps we need to look at what they are suggesting as a focus rather than a delivery. These authors suggest that what is needed is:

> *"the creation of a set of environments (eg the support classroom, the regular classroom, the home, etc) in which key activities are done in a strategic manner. Well designed strategic environments should promote, model, guide and prompt efficient and effective learning and performance across settings for all students, not just those with learning disabilities.*
>
> *..... It is most likely that the goal of student success will be achieved when validated learning strategy packages are delivered through strategically rich instruction in an environment which promotes teamwork and shared responsibility for the learning and performance of all students."* (p 222)

This was the principal development that occurred during the course of the programme. The almost total commitment to developing cooperative learning programmes resulted in achieving exactly what Deshler and Lenz promote: *"strategically rich instruction in an environment which promotes teamwork and shared responsibilty for the learning and performance of all students."* Each source of data confirms this. The triangulation of results from students, teachers, and principals demonstrates congruence on this point.

For many teachers cooperative learning formed the basis for a changed pattern of activity. The groups proved an ideal platform for the introduction of a wide range of strategies. The change in goal orientation from individualistic and competitive to collaborative and supportive provided the conditions in which developing strategies could be practised. Besides this teachers and students alike welcomed the opportunity to share, discuss and assist each other. It should be noted, however, that groups were used to enhance individual performance.

One concern was the translation of the information which the North American literature offers into New Zealand cultural settings. This is a matter upon which the author has commented before (Brown, 1989). In particular, whatever approach was taken, it was clear that it had to be seen as a whole class exercise without withdrawal of students into settings where subject domain material was set aside in favour of various forms of remedial activity.

This report has noted occasions where teachers have adapted strategies from their North American originals to meet the demands and requirements of New Zealand classrooms. Indeed, there were examples where teachers have combined strategies in ways that have not been reported in the literature and where they have established supporting structures similar to those which have been drawn from the literature but which have particularly suited their own classrooms.

In examining the nature of some strategy training programmes, Stone (1989) notes that effective instructional progammes have to take into account the "add-on" nature of strategic teaching for many students. Stone argues that students do not learn the strategies because they are taught in isolation or as devices, away from the natural process of strategy acquisition – dealing with the subject domain information strategically. Thus, persistence of use and generalisation is compromised. The question was, how do you find a context that meets the subject domain demands in secondary schools and provides the sort of scaffolded learning which Stone and others believe is a necessary element of a partnership between teacher and learner? Glaser (1990) suggests that the teacher who provides expert scaffolding and a collaborative group which maintains a mature non-decomposed version of a target task allows students to share complex tasks without simplifying them.

Though this may not have been the way the problem was defined in regular weekly discussions, it was very much the approach that was being taken. There are many examples throughout this report where teachers have incorporated strategic approaches into their regular classroom activities. In doing so, these teachers have met the challenge that Stone and Glaser present. This programme has quite consciously and determinedly sought to incorporate strategic teaching and learning activities within subject domain curriculum presentation.

A central theme for the work was that students would become increasingly responsible for their own behaviour. This point is illustrated by the development, in at least two of the many classes using the strategy, of work with advance organisers.

Glaser (1990) noted that the acquisition of automatic skills is a foundation for greater understanding and planning activity. He says: "*The theoretical implication is that major metacognitive changes are an unconscious byproduct of highly practised successful performance*" (p 32)

The application of such an approach is less obvious. Redding (1990) has shown that teachers can work to make explicit to their students, the strategies they are adopting and the reasons for using those strategies. Reporting on "The Empowering Learners Project", Redding noted: "*Some teachers are finding that when they explain the learning principles on which class activities are based, students begin to sense their own potential and become more active in their own learning.*" (p 48)

By making explicit the advance organiser process and by involving students in regular, sustained practice while tracing the teacher through the organiser, the principles noted by Glaser and Redding were being observed.

The above example illustrates one strategic application of the principle. There were many others. There is no intention to suggest, however, that this has been an easy task. There is evidence in the report of teachers agonising over ways in which they could bring a strategic environment into their classrooms. There are examples of frustration as well as excitment. There are occasions reported in which teachers have expressed doubt as well as optimism. The end result has been a continuing determination to pursue the strategic teaching approach.

The results reported from this study demonstrate that student outcomes were linked to the strategies. There are examples of improved achievement levels as teachers brought greater and greater focus to their lessons. Teachers spoke about "fine grain teaching" and detailed their teaching objectives in carefully written lesson plans. By applying a range of strategies to the task, teachers could demonstrate (and students could recognise) improvements in test results or work samples.

By the end of the project, teachers were planning for the next year. The principals' group featured this need and the teachers themselves were forming plans for ensuring third form classes were introduced to the programme, that collegial support networks would be in place and that further opportunites for professional development in this work would be taken up.

At the time of writing a great many other teachers have begun to work to develop skills in creating a strategic environment in their classrooms. Again this has been a collaborative exercise with equal recognition accorded teachers and consultant. This collaborative, cooperative approach has been a central feature of the work and is probably an essential ingredient to the success of the programme. Besides the issue of consultant credibility, it is likely that the willingness and capacity of the consultant to work collaboratively is vital.

What has emerged is a pattern for delivery in schools which engages the attention and enthusiasm of teachers. What is not yet so clear is the balance that needs to be struck between classroom activities where the consultant works jointly with the teacher and seminar presentations where teachers have an opportunity to develop a stronger theoretical understanding. This more measured enquiry into the principles and practices of establishing strategic classroom environments can probably only be developed through seminar work.

The author is presently looking at ways in which seminar activity and on-site consultancy compare and contrast and how they might be blended in the most effective way possible.

The author has worked on a continuous basis with some schools, on seminar programmes lasting up to 25 weeks, through to half-day orientation seminars. Inservice programmes lasting two days and spread over two weeks have been tried to give teachers an opportunity to put into practice some initial strategic skills.

What has been learned from all these activities simply reflects the broad perspective of the literature on teacher development. While orientation programmes and short term (two day across two weeks seminar/practice programmes) are useful in assisting teachers to gain some perspective, they are unlikely to bring about lasting change in teaching practices. An important element appears to be the long term support, facilitation and reinforcement as teachers try out new strategies, techniques and approaches in their classrooms.

If staff development in education is to be taken seriously, support must be provided across time and in sufficient depth by agents who have credibility. The lack of opportunity teachers engaged in this programme appear to have had, at any previous time, to develop ways in which they can deliver curriculum and social objectives stands in very real contrast to opportunities to learn the curriculum material itself (though by many standards even these opportunities would seem to be extremely limited).

As an example of this situation, the new mathematics syllabus, Mathematics in the New Zealand Curriculum (Ministry of Education, 1992) has been published. Despite its length, and the welcome it has received from teachers, it highlights the concentration upon subject material and achievement objectives while giving only limited guidance on its delivery. Mathematics teachers, in particular, have noted the need for further opportunities to explore ways in which they can teach problem-solving, team work and the introduction of strategic learning activities.

The challenge now is twofold. The first and obvious task is to refine the strategies, to work with teachers in natural settings to tease out in more detail, what works best and how to implement it. It is the author's opinion that this can only be done in a gradual way with teachers who are prepared to take the risks that those in the two schools did so willingly.

To do this, it is important that the programme is not imposed. There are many ways of teaching, many ways of assisting students. This programme has demonstrated that one of them can be made to work with teachers who are committed and energetic. It is the author's view that the strategic classroom approach would be short lived if it were turned into a requirement for any teacher. It is clear that teachers find it effective and join readily where it is freely available.

It is also clear that this approach is not a cure for poor teaching. The skills required to establish a strategic environment are found among teachers who are already successful in more traditional classroom teaching. While inexperienced teachers can learn these skills as readily as any others, experienced teachers who are unsuccessful are likely to find the demands of planning, classroom and programme management an added burden, unless they are highly motivated to improve their teaching practices anyway. The use of strategic approaches in preservice training and their availability to trainees is an obvious development.

It has been a notable feature of the project that the quality of teachers and the obvious dedication they have shown across the entire period has been so marked. Indeed, this level of enthusiasm was described as an essential component in the programme by the author and a colleague when reporting progress to the Australasian Association for Cooperative Education (Brown & Belton, 1991). Figure 1 shows a graphic illustration of this summary.

The second challenge is that of wider dissemination of the programme. It has been noted in the report that a significant number of teachers have taken up development opportunites already. If this programme were to receive wider support, it might be best achieved through some form of institutional recognition. Some tertiary institutions have already established further training opportunites, both certificated and credentialed. Some schools have independently sought the advice and services of the author in establishing their own staff development programmes.

What has been demonstrated here is the capacity for the programme to be delivered through institutions and independently through a private practitioner. There appears to be no particular advantage at the school level, in how this delivery takes place.

To a large extent the issue is one of a knowledge base and the availability of trained consultants. In this report, some guidance is given on the costs of establishing the programme over a wider number of schools. Whether the programme was run through an outside consultant or support staff within the schools, there would be a training implication. The author has set out his own experience earlier in the report. It is now appropriate to suggest the kinds of skills needed to sustain the programme on a regular basis.

For the programme to be successful, the consultant must be credible, free to retain confidentiality with teachers and free from administrative decisions which would divert attention from the programme to other school demands. The consultant must be able to deal equally easily with the "top three" and teachers generally. S/he must have a sound knowledge of and skill in educational development, the teaching-learning process, collaborative consulting and the application of the developing reasearch literature to classroom settings. Training for this role could readily be developed.

This project has demonstrated an approach to the teaching/learning process that is particularly helpful to those students who are failing in our schools. It is one which has attracted strong support from teachers and principals. Finally, students themselves have enjoyed the programme and claim to have gained benefit from it.

This programme is not a package or some kind of prescriptive module for delivery to teachers. The development of this programme has been formative. It is important to note however that its basis has rested firmly in the growing literature on effective schools, reflective teachers and the increasing influence of cognitive/developmental psychology applied to the classroom. As such, the programme is suited to thoughtful and deliberate further development.

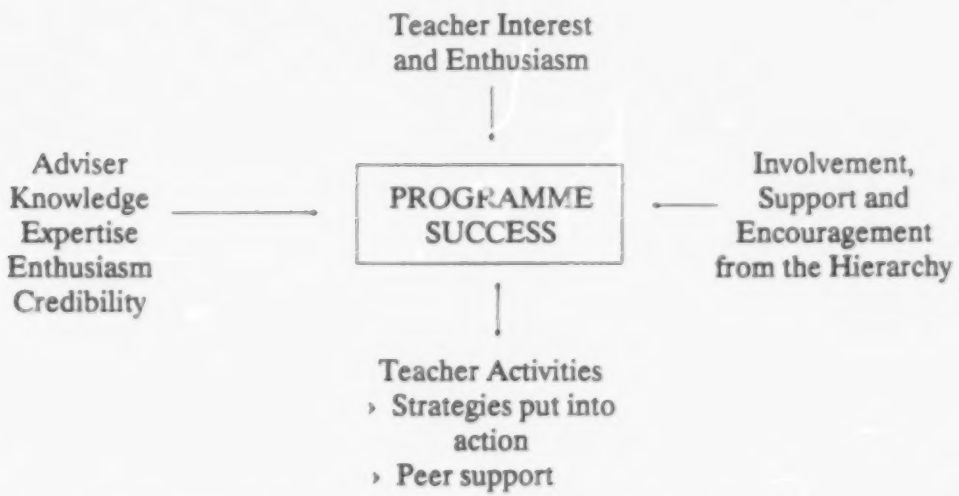
The programme appears to have met the criteria for effective professional development noted by Loukes (date uncertain); King, Hayes and Newman (1977); and Sparks (1988). The involvement of the principals' group was entirely consistent with the advice given by Fullan and Newton (1989). The three components of a satisfactory programme: (a) curriculum, (b) instructional, and (c) organisational described by Schumaker, Deshler and Ellis (1986) were all met.

Given the challenges and the opportunities posed by Tomorrow's Schools and the achievement initiative, this programme offers one means of enabling teachers to meet those challenges. The knowledge base for further development is available in New Zealand and there are practitioners with the qualities suggested who could deliver the programme.

This is a flexible programme that can be adapted and tailored to the needs of individual schools and teachers. It is therefore eminently suitable for the structures that have been put in place with Tomorrow's Schools. There is a core of principles to be followed. Schools can choose how best to incorporate them to meet the needs of their particular communities.

FIGURE 1

Components of a Successful Programme



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APPENDIX 1

TRACING ADVANCE ORGANISERS

The details of the use of advance organisers and their apparent advantage in orienting students to the lesson content are included here.

The nine steps of the organiser used in this programme were derived from a somewhat longer step system established by Lenz, Alley and Schumaker (1987). The nine steps were transformed into a format students might recognise and set out in a student kit for advance organisers.

This kit was transformed into a simple stepwise table by the students. As the organiser was delivered by the teacher, the students would tick the appropriate checkpoint if they believed the item had been covered. In this way the teacher was able to check with the students whether they had noted each of the items that she had included in the organiser.

An interesting element of this approach was that the students were permitted to interrupt the teacher if they felt that an item had been missed or not covered adequately. Thus, the teacher might be asked to repeat (say) the concepts – so that they could be sure that they had grasped it. If, occasionally, the teacher had omitted a section of the organiser without telling the class, then students would put their hands up to remind her that that point hadn't been noted.

In an attempt to keep a track on the progress of this programme, the teacher used a pre and post measure. A complicating factor was that this particular teacher had used advance organisers very successfully for some time. Nonetheless, it was interesting to see if there would be a change between the pre and post measures once the students had had an opportunity to trace the teacher through the organisers for each period.

The first measure was taken in July and the last measure taken in November. The following questionnaire was given to students. They completed it in silence and handed their papers to the teacher at the conclusion of the measure. The students could seek assistance with a question by raising their hands.

The questionnaire was devised by the consultant and the teacher working together. A draft was checked by an experienced educational psychologist familiar with the use of advance organisers. The questionnaire is reproduced overleaf.

ADVANCE ORGANISER – STUDENT QUESTIONNAIRE

To answer these questions:

first	read each question carefully
then	underline the answer that fits best for you
finally	check your answers and sit quietly

1. When a period begins does your teacher:

   (a) start straight away with the lesson
   (b) help you to understand what the lesson is about
   (c) tell you the lesson starts with an advance organiser

2. At the beginning of a lesson how do you know what the topic will be?

   (a) the teacher tells you
   (b) you listen to see if you can work it out
   (c) you don't know

3. When the lesson has a new topic, how do you make it fit into things you already know?

   (a) you don't
   (b) the teacher helps you to think of ways to do it
   (c) you have to wait til later when you can work it out

4. Lessons sometimes have one or two new ideas which are difficult to understand. How do you know when a lesson has difficult ideas in it?

   (a) you find out as you go along
   (b) you can't tell
   (c) the teacher goes over them at the beginning of the lesson

5. How do you know about new vocabulary or technical words that are to be used in the lesson?

   (a) there is a vocabulary list for you to look at
   (b) you are given the words as you go
   (c) you are expected to find them during the period

6. What does the teacher tell you about what will happen during the period?

(a) the teacher doesn't tell you
(b) you were told at the beginning what will happen
(c) the teacher just asks you to do things during the period

7. When do you find out what you are expected to have done by the end of the period?

(a) at the end the teacher tells you
(b) at the beginning when the teacher starts the lesson
(c) during the lesson sometime the teacher lets you know

8. How do you know why you are learning what the lesson is about?

(a) the teacher explains why it is important to learn it
(b) you realise while the lesson is going on
(c) you have to work it out for yourself

TABLE 52

Results of Pre and Post Questionnaire on Advance Organisers

	PRE QUESTIONNAIRE (July) %			POST QUESTIONNAIRE (November) %		
Question Number	(a)	(b)	(c)	(a)	(b)	(c)
1.	9	82	9	5	55	40
2.	72	14	14	100	0	0
3.	0	64	36	5	90	5
4.	18	18	64	10	0	90
5.	46	36	18	70	30	0
6.	0	91	9	0	100	0
7.	4	50	46	0	95	5
8.	82	18	0	95	5	0

These results are interesting in that it can be seen from the table that the majority of students had a good grip on the organisation of a lesson at the beginning of a period. It is likely that this is the result of a teacher using the organiser effectively in the first place. No data are available for this class on the perception of students prior to the use of an organiser at all since the teacher began the year using this strategy.

While the changes in the questionnaire scores are not particularly dramatic, they are very clearly in the direction of a more explicit understanding by the students of the organisation and framework of their lessons. As an interesting comparison, a teacher completely naive to advance organisers and whose class had not had this strategy used by any other teacher, decided to begin their use. This teacher administered the questionnaire to her class with the following results:

TABLE 53

Results of Questionnaire on Advance Organisers

	%		
Question Number	(a)	(b)	(c)
1.	54	40	6
2.	94	0	6
3.	25	63	12
4.	65	12	23
5.	6	88	6
6.	0	53	47
7.	12	18	70
8.	69	19	12

While the results are not comparable in terms of any control over pre and post measures, they are indicative of the differences that can be found.

In summary, it appears that by teaching students to trace the strategic development of the introduction to a lesson, students can develop an increased awareness of the critical features of the lesson (as made explicit in the advance organiser).

APPENDIX 2

TEACHER QUESTIONNAIRE DEFINITIONS

QUESTIONNAIRE FOR TEACHERS

PART TWO

ITEMS AND DEFINITIONS

Question 1: "How in your opinion, does learning take place?"

PROBLEMS OF PROCESSING

A description which recognises that a student must work on curriculum material in such a way that cognitive processing is highly likely. Includes a description which states the need for cognitive processing without recognition of the concept.

UNEXPLAINED/UNSPECIFICED PROCESS

A description which offers no clear explanation of how learning or academic achievement is advanced while stating or implying that progress does occur.

CLASSROOM ENVIRONMENT

Acknowledges the external conditions or recognises that the classroom conditions are a factor in learning. May include simple recognition that it matters or an act of establishment of the environmental conditions to facilitate learning.

ACTIVE PARTICIPATION

Any indication that the learner must be an active participant, interacting with the learning materials.

LEARNING COMPONENT MODEL

A clear statement of a Gagney's components or a recognition that his components are required by citing his name, or at least five of the steps individually listed. A clear statement of any other model. A logical/sequential description of a learning sequence which is consistent with current literature. A statement of teaching sequences from the Kansas or other similar model, or at least five of the steps individually listed.

VERBAL INTERACTION

Discussion with others as part of a learning activity without any link to a more complex definition such as cognitive processing.

PREVIOUS EXPERIENCE

The notion that students can build on past experience or that past experience is a recognisable entity but with no specific reference to past experience in any cognitive schema.

MOTIVATION

An expression of the student wanting to learn, having an interest in learning. Use of the term motivation. An indication that primary, secondary or tertiary reinforcers are required to initiate or sustain behaviour leading to learning. Use of the terms internal or external motivation.

TRANSFER/GENERALISATION

The notion that learning must include the capacity to perform the learned skill in other settings. Does not include use and application without reference to another or different settings.

SOCIAL VALIDITY

Recognition of the value of learning by the learner or by others.

Question 2: "What, in your view, are the characteristics of an academically successful student?"

SELF MANAGEMENT

Student is organised/disciplined/takes action to complete work on time, keeps good notes, is tidy, timely, etc.

MOTIVATION

Any statement which indicates internal motivation and responses to extrinsic motivation (the definition of motivation from question one is continued here).

An expression of the student wanting to learn, having an interest in learning. Use of the term motivation. An indication that primary, secondary or tertiary reinforcers are required to initiate or sustain behaviour leading to learning. Use of the terms internal or external motivation.

SELF CONCEPT

Comments on self confidence, personal autonomy.

COGNITIVE PROCESSING

The definition from question one is used here.

METACOGNITIVE PROCESSING

Recognition by the student of knowing how and when to use strategic cognitive skills. The need to learn by using such skills.

ACHIEVEMENT

A student who strives to achieve. A student who does achieve.

FAMILY FACTORS

A family setting which is supportive, motivating and encouraging. One where the student is expected to function effectively and in a disciplined/committed manner.

DEVELOPMENTAL

A student who has a history of success which stimulates further success.

SKILLS A student who demonstrates study skills or academic skills but without specifying cognitive strategies.

INTELLIGENCE

Any reference to intelligence, intelligence scores or intellectual ability.

ATTITUDE

Explicit statements indicating a "positive attitude" to academic work.

BALANCE

Any statement explicitly referring to "a balanced approach" or a "balance".

Question 3: "What, in your view, are the characteristics of the academically low achieving student?"

SELF ESTEEM

An indication that the student lacks confidence, has a low view of personal worth.

NON-PARTICIPATING

Does not participate, join in, respond to peers or teachers in a positive manner.

BEHAVIOURAL DIFFICULTIES

The student is regarded as a behaviour problem, ranging across the spectrum of behavioural difficulty and including emotional problems.

FAILURE ATTRIBUTION

The student attributes current status to prior failure, lack of assistance from others, etc.

ATTITUDE

The student has no interest in education -- for a variety of reasons. This category was not used where motivation was cited by the teacher.

FAMILY FACTORS

A family setting which shows lack of support, lack of value for education (at home) no insistence on a disciplined approach or commitment to learning.

MOTIVATION

Statements involving aimlessness or student having no academic aims or goals. (The definition from question 1 was included here.)

An expression of the student wanting to learn, having an interest in learning. Use of the term motivation. An indication that primary, secondary or tertiary reinforcers are required to initiate or sustain behaviour leading to learning. Use of the terms internal or external motivation.

LOW ACHIEVEMENT

Student achieves at low level. Student does not strive for success.

SKILLS Poorly developed academic/studies skills.

SELF MANAGEMENT

Student is not organised/disciplined – fails to take action to complete work on time, does not keep good notes, is untidy, is not timely etc.

COGNITIVE PROCESSING

Does not show any recognition of the use of stategic cognitive skills, lacks these skills. (The definition from question 1 is used here.)

INTELLIGENCE

Any reference to intelligence, intelligence scores or intellectual ability.

Question 4: "What, in your view, are the three most important things you do as a teacher?"

SELF CONCEPT

Any activity which will enhance a student's self concept/self esteem.

COOPERATIVE TEAMWORK

Activities which enhance a student's collaborative/teamwork skills and cooperative learning interactions.

MOTIVATION

(The definitions used in previous questions were used here.)

ENVIRONMENT

The notion that a learning environment which will enhance learning will be established.

SOCIAL LEARNING

The use by the teacher of carefully determined social interactions to enhance learning, eg modelling, having students model target behaviours.

SELF MANAGEMENT

Leading, guiding or otherwise ensuring students learn to become organised, disciplined, more autonomous as learners.

COMMUNICATION

Some indication that the teacher must communicate subject domain details, the purpose of learning or the nature of the task.

AFFECTIVE FACTORS

A teacher's effort to support students, to simulate their interest. Shows an interest in students and care for their interests.

CURRICULUM

Emphasis upon the curriculum by explicit statements about learning subject domain material drawn directly from the curriculum.

COGNITIVE

(The definition used in the above questions was used here.)

METACOGNITIVE

(The definition used in the above questions was used here.)

Question 5: "What are the three most valuable skills you have as the teacher?"

MOTIVATION

Any statement which indicates that the teacher can motivate or wants to motivate students.

ENVIRONMENT

Any statement which indicates that the teacher can or wants to establish a suitable environment for learning.

INSTRUCTIONAL STRATEGY

The teacher believes in establishing strategies for the delivery of content material or tasks requirements which are strategic for learning.

MANAGEMENT

Any statement indicating ordered, disciplined, regulated classroom activities. Includes organisation of material and management of student behaviour.

COMMUNICATION

Any statement indicating positive, helpful communication with students, ranging from clear instructions to listening to student ideas (non-specific), eg not in the context of effective question and answer methods.

AFFECT Relating warmly and positively to students and their interests.

FLEXIBILITY

Any statement indicating openness to change, student need and new ideas.

KNOWLEDGE

Specific reference to knowledge of subject or other matters relating teaching.

COGNITIVE

(The definition for the questions above was used here.)

METACOGNITIVE

(The definition for the questions above was used here.)

EVALUATION

Skills in evaluating students'q learning and student outputs.

Question 6: "When students fail to achieve academic success, what are the three most important contributing factors?"

FAMILY/PEER ISSUES

A family setting or peer group which is unsupportive of learning or negatively disposed to learning and/or school.

MOTIVATION

Any statement which indicates lack of intrinsic motivation or where extrinsic motivation is not provided by key people. Includes aimlessness, lack of purpose, lack of clear goal orientation.

SELF ESTEEM

Lack of confidence, low view of personal worth.

HISTORY OF FAILURE

Any statement indicating that present failure is a direct result of a previous history of failure. Includes reference to formative years.

SKILLS A failure to demonstrate academic or study skills.

ABILITY/INTELLIGENCE

Any statement which attributes failure to low intellectual ability or refers to intelligence.

TEACHING STRATEGIES

Failure of teachers to ensure the use of strategies which ensure (or aim to ensure) students will cognitively process material to be learned. Includes principles of learning as set out by Gagne or other strategic approaches.

LEARNING STRATEGIES

A failure to demonstrate the use of strategies which ensure material is encoded (as in Gagne's approach) or other strategic approaches.

Question 7: "What, in your view, are the three most important characteristics of a successful teacher?"

MANAGEMENT SKILL

Planning and organising skills. Classroom and behaviour management.

MOTIVATION

Ability to motivate others. Can encourage and develop intrinsic motivation in students.

COMMUNICATION

Statements which demonstrate teachers try to make clear, unambiguous statements to student. That they try to "reach" students in their verbal interactions.

KNOWLEDGE

Knows the subject material and understands it.

PROFESSIONAL DEVELOPMENT

A teacher who is seeking to improve profession or subject a main knowledge, skills or interests either directly or indirectly.

RELATIONSHIPS

Forms, maintains, encourages sound interpersonal relationships between teacher and student or student to student.

CONFIDENCE

Any statement which suggests teacher confidence in themselves.

TEACHING STRATEGIES

Failure of teachers to ensure the use of strategies which ensure (or aim to ensure) students will cognativity process material to be learned. Includes principles of learning as set out by Gagne or other strategic approaches.

Question 8: "At the end of the school year, what is the most important thing you hope you have achieved for the students you have taught during the year?"

Post questionnaire asked this question retrospectively.

ACHIEVEMENT

Students will have achieved success in subject domain requirements – includes the notion that students will have perceived success.

MOTIVATION

Students will be or will have been challenged by the task demands, responded with enthusiasm, feel they have tried hard.

KNOWLEDGE

Students will know more about subject domain material.

SELF CONCEPT

Student awareness/attribution of success and positive feelings about it. May include subject domain or social/personal skills.

LEARNING STRATEGIES

Students will actively and consciously apply strategies (cognitive and/or metacognitive) to learn and revise.

PART THREE

Question 1: "How can a teacher train students to monitor their own work?"

EVALUATION

Any comment indicating a student's own review of their work.

PEER EVALUATION

Indication that a student seeks or has arranged for them peer review of their work.

GOAL SETTING

Indicating a student sets, is encouraged to set or has set any form of learning or outcome objectives which would encourage or ensure improvement in their work through self review or appraisal.

SELF MANAGEMENT

Indicating the development or maintenance of a disciplined, organised approach to review of their own work.

NOT GERMAINE TO THE QUESTION

Indicating some element of teaching which does not address the question.

Question 2: "What are the principle rules students should be taught for reading a page of a textbook in a relativity short time, in order to recall the essential elements and some of the details?"

READ-REREAD

Any form of reading ranging from skimming to detailed or repetitive reading. Must include at least a second reading.

UNDERSTANDING

Ensuring students know the purpose for which they are reading.

SKIM READING ONLY

Skim reading of the chapter.

STRATEGIES

Any steps which involve complex or multifaceted methods, eg SSQR or paraphrasing.

PROCEDURES

Any steps which lead the student down the page without using a strategic approach.

INSUFFICIENT

Any approach which is part of a strategy but is not enough by itself, eg "look for key points".

NOT GERMAINE TO THE QUESTION

Indicating some element of teaching which does not address the question.

Question 3: "Many students can recall things over short periods but can not remember them for any length of time. What actions can a teacher take to deal with this?"

REVISION Any statement which engages students in revision exercises, tests, rereading previous material.

STRATEGIES

Any programme which involves carefully planned cognitive processing aimed at encoding, storage and retrieval skills.

PROCEDURES

Any programme which will lead the student through a series of steps but do not include any conscious teacher effort to ensure cognitive processing.

GLOBAL UNDERSTANDING

Any method which encourages global understanding of the material – usual assuming the details will follow when/be retrieved when the whole of the material is understood.

TEACH-RETEACH

(A new item emerging from post questionnaire)

Any carefully planned approached which includes a form of reteaching greater than revision but does not target cognitive processing specifically.

Question 4: (Purpose)

"For what purpose do they (students) work in groups?"

WORKLOAD MANAGEMENT

Using groups to divide work, share it around or speed up the curriculum delivery.

CLASS/SUBJECT MANAGEMENT

Using groups because of the nature of the subject, eg experiments in science, social studies investigations.

COGNITIVE

Using groups to engage students actively in cognitive processing, to reduce passive learning, to increase understanding.

BENEFITS OF GROUP MOTIVATION

Using groups for motivational purposes, social skills development, to encourage cooperative behaviours.

Question 5: (Skills)
"Which skills did you teach?"

ACADEMIC/COGNITIVE

Skills of listening, exploring ideas, summarising, ensuring understanding.

SOCIAL Skills of turn taking, encouraging others to participate, conflict resolution, positive interaction skills.

FUNCTIONING AND MANAGEMENT

Skills of task assignment, time management, forming groups, role allocation.

Question 6: "Please name three differences between cooperative learning groups and traditional class group work?"

GROUP RESPONSIBILITIES

The group members are responsible to themselves and the others, all must be included in the group's activities and in developing and delivering answers.

ACTIVE VERSUS PASSIVE

Groups encourage active learning, all group members must be active, there is active use of cognitive skills, it's hard to be passive in a group.

ON TASK/MANAGEMENT

The groups keep students on task, groups learn skills of leadership and task management, goal setting, role allocation and performance.

SOCIAL SKILLS/INTERACTIVE

Children learn skills of personal interaction.

INDIVIDUAL ACCOUNTABILITY

Students will be responsible for their own performance, will be assisted by the group to be indepedent.

INTERDEPENDENCE

Students are interdependent upon each other.

HETEROGENEITY

Groups are set up to be heterogeneous.

Question 8: "Please comment on the use of groups in your classroom even if you did not use groups during the two terms." (post questionnaire only)

INCREASED FREQUENCY

An indication that the teacher increased their use of groups.

GREATER SUCCESS WITH GROUPS

An indication that teachers believed that they had improved the academic success of their students through the use of cooperative groups.

PEER INFLUENCE

A comment that the teachers recognised the importance of group interactional patterns and the influence of group members upon their peers.

INTENTION TO USE

A clear statement that the teacher intended to use groups more in the future.

STUDENT ACCEPTANCE

An indication that the teacher noted positive student acceptance of cooperative group work.

STUDENT LACK OF ACCEPTANCE

An indication that the teacher found negative student reaction to the use of cooperative groups.

Question 9: "Did you pass on any information to strategies approach to colleagues who are not involved in the project (include colleagues in other school)? If so comment briefly."

FORMAL SHARING WITHIN SCHOOL

An indication that the teacher was involved in delivering information on the project to colleagues.

FORMAL SHARING OUTSIDE SCHOOL

An indication that the teacher was engaged in some kind of in-service training programme where they delivered information to colleagues in other schools.

INFORMAL SHARING WITHIN SCHOOL

Teachers shared information with each other, for example in the staffroom or as they worked together on the development of form activities.

INFORMAL SHARING OUTSIDE SCHOOL

The teachers were able to share information with colleagues in other schools on an informal basis.

COLLABORATIVE DEVELOPMENT

An indication that teachers were engaged in some form of activity which involved them working collaboratively with colleagues in a way that allowed them to pass on information.

Question 10: "Did colleagues involved in the project pass on information to you that you would not have gained from meetings or other contact with the researcher? If so, please comment briefly."

ASSISTANCE WITH NEW INFORMATION

The teacher had passed on information from colleagues which was new or different and consistent with the strategic classroom approach.

ASSISTANCE WITH PROJECT INFORMATION

The teacher had passed on from colleagues specific information on the strategic classroom approach which they had not gained either formally or informally from the author.

DISCUSSION BUT NO NEW INFORMATION

The teacher had discussions with other staff members about activities associated with strategic classrooms but no new information was gained.

NO The teacher answered "no".

Question 11: "Please write any comments wish on the project, its value, the advantages, disadvantages and the like."

VALUABLE

The teachers found the project valuable.

IMPROVED TEACHING PERFORMANCE

The teacher believed that their teaching performance was enhanced by their inclusion in the programme.

POSITIVE TRAINING OPPORTUNITY

Teachers saw the programme as a positive opportunity for them to develop their skills as teachers. The teacher made a positive comparison between this programme and other training they had received.

POSITIVE STUDENT RESPONSE

Teachers reported students responded positively to the programme.

NEGATIVE STUDENT RESPONSE

Teachers reported students disliked some element of the programme.

POSITIVE TEACHER REFLECTION

An indication that the teacher felt s/he had become more thoughtful and positively reflective about their teaching approach.

CONSULTANT VALUE

A statement from the teacher indicating the value of having a consultant available to them.

APPENDIX 3

STUDENT QUESTIONNAIRE DEFINITIONS

QUESTIONNAIRE FOR STUDENTS

Definitions were required for those sections of the student questionnaire which asked open ended questions. Category definitions for the appropriate questions follow.

ITEMS AND DEFINITIONS

Question 11: "What did you like most about groups or pairs?"

IDEAS
The generation, combination, sharing, contributions to solutions.

WORKING TOGETHER
A spirit of cooperation, learning to work together, sharing a workload, or combining skills.

HELPING EACH OTHER
Any indication of a combined helping approach.

GETTING HELP
Receiving help from others – includes relief from some tasks.

GIVING HELP
It refers to any specific indication of helping others without necessarily receiving help in return.

RELATIONSHIPS – GETTING TO KNOW OTHERS
Any indication of the importance of forming friendships, interacting with others in a fashion which adds to group cohesion or increases bonding with classmates.

ENHANCES LEARNING/MOTIVATING
Includes speed of learning, any indication that it is easier to learn, more complex or detailed answers might be found, motivating experiences, any suggestion that more work might be done, an indication that students are more certain of answers, that they learn more and that they might be learning from each other.

SELF CONFIDENCE
Indications that confidence is gained, not feeling foolish when speaking to groups or to the whole class, a greater willingness to offer opinions.

INCLUSION
Any indication that students feel included, that they do not feel left out or generalised statements that it is important to ensure classmates are included in the classroom activities.

COMFORT/FUN

Not feeling pressured, the size of the group might encourage contributions, it is easier to work in groups, it is more fun, not boring or that students are working with people with whom they feel relaxed.

DISCUSSION

Students feel free to talk about the work, discussion as a means of learning, opportunities to discuss. This category does not include any indication that learning is enhanced.

NOTHING The word nothing or any variation on that.

DON'T KNOW

The words "don't know" or any variation on that.

Question 11A:

NON-CONTRIBUTORS

Failure to participate/contribute for any reason. This category is not used for effects of non-contribution, only its occurrence.

Being required to share ideas, work or materials. An indication that this is done with reluctance.

NEGATIVE EFFECTS OF NON-CONTRIBUTORS

Concern over results of non-contribution by other group members, including academic, social or productivity issues.

LOSS OF INDIVIDUALITY

Any indication of loss of individual challenge or the chance to work on one's own. Any loss of opportunity to work at one's own pace. Includes any suggestion that a student might feel individual opinions were overridden.

OFF TASK Talking, distraction, any indication that the group was working to some other agenda or that individual members were not remaining on task.

INCOMPATIBILITY

Didn't like other group members, didn't get along with one or more others in the group.

DOMINANT INDIVIDUALS

Domination of the group by one or more members or attempts at such domination. Includes any indication that a student has felt dominated or subdued by one or more group members.

LESS WORK DONE

Any indication that insufficent work was done in the time, that the procedure was too time consuming or that an individual could complete the work more effectively or speedily on their own.

SKILLS ISSUES

Used when responses indicated problems within the group or for an individual caused by unfamiliarity with group activities; lack of communication skills, difficulties in the mechanics of dealing with each other's work and the like. Includes poor management of conflict, inability to resolve conflicts effectively, misuse of roles and the like.

NOTHING The word nothing or any variation on it.

OTHER This category is used when statements are incomplete, they are ambiguous or they are of such an unusual nature that they do not fit any of the other categories. Nor do they occur more than once so as to form a category of their own.

Question 11b: "Did they [cooperative groups] help you to learn? (Say why)."

"Yes" Responses

OPPORTUNITY TO DISCUSS

Groups provided the opportunity to talk over the lesson material.

HELP AVAILABLE WITHIN THE GROUP

Any indication of provision of help within the group. This category was not used to include the broadening of ideas or the wider knowledge base available within the groups – these are separate categories.

BROADENING OF IDEAS/APPROACHES

Any assistance in improving thinking, new approaches to the work or achieving greater understanding of issues through cooperative group work.

IMPROVED PERFORMANCE

Indication of any increase in marks, any effect seen in exams results and the like. Includes any influence upon academic or social skills as perceived by students.

BENEFIT SHARED

Any perceived benefit to a range of peers.

WIDER KNOWLEDGE BASE IN GROUPS

More information is available, more minds on the job, any indication that the group provided a resource which students could tap into.

COLLABORATION SKILLS IMPROVED/
POSITIVE EFFECT ON WORK PATTERNS

Any indication that by working well together the group had a beneficial effect on cooperative or collaborative skills. Includes motivation of students to work better or improve their performance and the enjoyment of working in a group.

"No" Responses

NON PARTICIPATION

Any negative effects resulting from non-participation of individuals within the group.

PREFERRED INDIVIDUAL WORK

Could learn more on their own, preferred to work on their own, felt it was more efficient to work on their own.

OFF TASK Any indication that the groups were off task.

CONFUSED BY GROUP WORK

Students could not understand the work or workings of a group, they felt left behind or otherwise indicated no clear understanding of working as a team.

RELATIONSHIPS NOT WORKING

Any indication that students couldn't work with their peers, felt unable to learn in the groupings they were placed in or were otherwise upset by one or more individuals in the groups in which they worked.

Question 12: "How did you like the teacher deciding who would be in your group? Was it the best way to decide?"

Approved Teacher Selection

BETTER WORKING ENVIRONMENT

Any indication that teacher selection ensured a productive and effective working environment. This included issues of class management.

HETEROGENEITY

Groups were assured of mixtures of gender, ability or other heterogeneous combinations. Included the opportunity to meet new people or understand ways in which other people thought.

FAIRNESS The word fair or any variation on it. Includes any indication that the student did not particularly prefer to work in teacher selected groups but found it was successful. Includes any indication that teachers allowed nominations (and therefore appropriate groupings) of other students with whom the respondent simply could not work.

MORE EFFICIENT

Reduces timewasting and the like.

Not Approved Teacher Selection

HOMOGENEITY

Prefer their own friends, same gender, or similar responses. Includes any personal response to one or more individuals. Includes any indication that student selection produces better working conditions.

NON-PARTICIPANCE

Any indication that non-participants affect the quality of work.

NOT AN EFFECTIVE METHOD

Cooperative groups are not seen as an effective teaching strategy.

RESERVATIONS

A clear statement that the student did not agree with teacher selection but where any comment was added indicating that it could work for others, that it had proved successful in the respondent's experience or that it had worked well for them on some occasions. This category was different from the subset of "fairness" where students had supported teacher selection even though they might have preferred student selection.

Not Applicable

This category was used where the student indicated they believed the teacher did not require teacher selection, or where the student did not think that it mattered and expressed no preference in either direction.

APPENDIX 4

ADVISORY COMMITTEE MEETING DEFINITIONS

MEETING WITH ADVISORY COMMITTEE

COMMENTARY FROM TEACHERS

PROGRESS EVIDENT

Student progress, school tone, student-teacher relationships had improved; students identified with the programme, students sought/expected/demanded elements of the programme in their classwork.

ENGAGEMENT OF STAFF COLLEAGUES

Other staff members became involved in the programme, they took an interest in what their colleagues were doing or cross-curricular activity and communication was enhanced by the programme activities.

TEACHER MOTIVATION

Teachers felt they were experiencing "a new beginning", further training would be welcome or sought and that they were "hungry for more".

PROGRAMME ACCEPTABILITY

The continuity and continued involvement of teachers was a significant element of the programme; the consultant's approach was non-threatening; the effectiveness of the programme was achieved in part by the quality of feedback teachers received.

COLLEGIAL SUPPORT

Teachers benefited and were motivated by the support they gained from colleagues.

VALUE OF AN OUTSIDE CONSULTANT

Teachers believed an outside consultant was a necessary/desirable element of the programme; the programme could not succeed without the expertise, objectivity or trust teachers could place in a person outside the school's system.

ON SITE DEVELOPMENT

Teachers believed that the "hands on support" and on the job development they received were significant to progress they made.

PROGRAMME VALIDITY

Teachers believed that the methods available through the programme were soundly based in theory and reliable in classroom practice.

GAVE DIRECTION

Teachers believed that the programme added direction and purpose, a form of goal orientation to their work.

REDUCED STRESS

Teachers indicated that they felt less stress as a direct result of the programme.

TEACHER CONTROL

Teachers believed that they maintained control of the programme throughout the period; teachers could nominate areas for their own development.

ADMINISTRATION

Certain administrative issues were identified. These included involvement of the "top three" in the programme and the advantage of working with another school.

APPENDIX 5

INTERVIEW WITH PRINCIPALS

DEFINITIONS – INITIAL

QUESTIONNAIRE FOR PRINCIPALS, ASSISTANT AND DEPUTY PRINCIPALS

INITIAL INTERVIEW

ITEMS AND DEFINITIONS

Question 1: "What aroused your interest in the project?"

STAFF INVOLVEMENT

Staff with credibility as teachers were involved in the project.

COMPATIBILITY OF IDEAS

Information on the project and that which emerged from it was compatible with the principal's own views.

CONSULTANT CREDIBILITY

The consultant had established a credible reputation for staff development in the school.

RELEVANT PROPOSALS

The proposals set for the programme by the consultant were seen as relevant and appropriate within the school.

1990 ACTIVITIES

The work carried out by the consultant during 1990 was regarded as relevant and credible.

PROFESSIONAL DEVELOPMENT

The elements of the programme were regarded as important professional development issues which the principals valued.

Question 2: "What factors do you think will have an important influence on the development of the programme?"

PRESENT AND SELL IT WELL

The principal would present the programme in a good light and encourage/recruit staff to join it.

MAINTAIN MOMENTUM

The principal would work actively to maintain the programme across the two school terms of its duration.

TOP THREE ENCOURAGEMENT AND SUPPORT

Encouragement and support which would emanate in particular from the top three professional management team in the school.

LIAISON Feedback and interchange between the principal and the consultant.

STUDENT/PARENT SUPPORT

SUSTAINED TEACHER ENTHUSIASM

Enthusiasm is generated within the teaching group rather than the principal's group.

1990 ROLE MODELS

The continued modelling of appropriate behaviours from staff involved in the 1990 programme.

CONSULTANT AVAILABILITY

The consultant will be available on a regular and continuing basis.

STYLE OF PROGRAMME

A non-threatening, inclusive style adopted by the consultant.

Question 3: "What strategies did you use to interest and involve the staff?"

1990 PROGRAMME SUCCESS

Reference to the success of the programme during 1990.

CONFIDENCE IN STAFF SUPPORTING THE PROGRAMME

Confidence expressed in staff who have credibility as teachers and were involved in the project.

VALUE OF THE PROGRAMME

The programme had validity and was seen as being of genuine value to the school.

WORK WITH ANOTHER SCHOOL

SUPPORT AND ENCOURAGEMENT

The need was seen to support and encourage staff engaged in the programme.

ACTIVE RECRUITMENT

Question 4: "How do you perceive your role in this project?"

SUPPORT Support to staff working on the programme.

LIAISON Liaison with board of trustees, the consultant or others with significant involvement.

FACILITATE/MOTIVATE
To ensure that staff engaged in the programme would remain motivated and have their work patterns supported.

PERSONAL INVOLVEMENT
A desire or intention to work on the programme personally.

NO PERSONAL INVOLVEMENT
A clear statement indicating that though support would be given, the person would not be involved directly in the programme.

Question 5: "What events and factors that you can identify occurred as the 1990 programme developed?"
"What were the effects of these things?"

CAPTURES STAFF INTEREST
Staff interest was caught by the programme and staff continued to join it after its commencement.

ENTHUSIASM/ACHIEVEMENT
Enthusiasm was evident among staff; staff remarked upon professional achievement and ownership of the programme.

FLOW OVER
There was a flow over effect to other staff with evidence of staff not in the programme picking up programme activities.

LOCAL PUBLICITY
National or local news events drew attention of the local community to the programme.

REPORTS OF IMPROVED CLASS WORK

CONSULTANT CREDIBILITY
There was evidence that the staff saw the consultant as credible in the field of staff development.

DEVELOPING SELF SUFFICIENCY

There was evidence of a developing self sufficiency about the programme which would enable it to function without the consultant's presence.

Question 6: "What were the sources of pressure and support for you?"

CHANGE This project could be seen as just one more change event in a long line of changes.

TIME CONSTRAINTS

Availability of time to carry out new programmes.

DIRECTION

A need for a sense of direction with further development of the programme.

LITTLE OR NONE

Little or no pressure was felt by the principal.

ADMINISTRATION

Some administrative detailing and time allocation was necessary.

LACK OF PERSONAL INVOLVEMENT

Concern over inability owing to administrative commitments to be as fully personally involved as the principal would have wished.

STAFF REACTION POSITIVE

A positive staff reaction was indicated.

SENIOR STAFF ENTHUSIASTIC

Senior staff within the school who had credibility with the principal were enthusiastic about the programme.

PROGRAMME CREDIBILITY

The programme itself was seen as a credible and appropriate form of staff development.

COLLEGIAL SUPPORT

Members of the principals' group felt they would receive support from within their own team and from other colleagues within the school.

Question 7: "How will you use new knowledge that emerges from the programme?"

DISSEMINATE RESULTS

An attempt would be made to disseminate information on teaching and learning strategies throughout the teaching staff.

DEMONSTRATE PROGRESS

An effort would be made to let other staff, the community and colleagues generally know of the progress that was being made, both with the programme and with outcomes for students.

IMPROVE SCHOOL STRUCTURE

Organisational structures, including staff development programmes, would be informed or rearranged in a positive way following upon the new knowledge generated through the project; this would include arrangements of classes which may be seen to be better than those in existence.

IMPROVED INSTRUCTIONAL LEADERSHIP

An emphasis upon leadership from within the principals' group that had to do with professional skills, teaching and curriculum delivery and class management.

IMPROVE OWN SKILL

An expectation that the principal's own teaching and staff development skills would increase.

Question 9: "What do you expect the school to get out of this project?"

INDIVIDUALS ACHIEVE BETTER

Any indication that individual students will show higher levels of achievement.

STUDENTS GET BETTER DEAL

Any indication that the student population in general would benefit from the skills developed by the teachers.

SUCCESS ACKNOWLEDGED IN THE COMMUNITY

MORE COMPETENT/CONFIDENT TEACHERS

An indication that teachers would improve their general competence and their levels of confidence would increase.

EXAM RESULTS (LONG TERM)

An indication that in the long term there would be an improvement in the school's overall publication examination performance.

DEVELOPMENT

That the project would be an important step in the continuous development of teacher effectiveness.

Question 10: "How do you see the structures of your school organisation being supportive of teachers in a development project?"
"Will there be a need for any additional support structures?"

RESOURCES

Any indication of the need for time, funding, or teacher numbers; the notion that good development programmes must be resourced in a generic sense.

SUPPORT FOR TEACHERS FROM THE PRINCIPALS' GROUP

GREATER ACROSS CURRICULUM ACTIVITY

An indication that the particular development programme was not curriculum based but was aimed at generic teaching-learning programme development.

EXISTING SUPPORT

An indication that existing support was at a high level.

SELF SUFFICIENCY

An indication that the project is in itself a supportive activity within the school.

Question 11: "To what extent do you believe that collegial management of this development programme (or indeed any innovation) is desirable or possible?"

YES

COOPERATION WORKS

A collaborative/cooperative approach obviates difficulties; when more people are involved a greater effectiveness results.

MIXTURE A mixture of principal direction and collaborative/cooperative management is probably necessary.

COOPERATION/COLLABORATION DEMANDED

Cooperation and collaboration and an interdependent management structure is an intrinsic element of the approach already demonstrated; the project could not operate in any other way.

APPENDIX 6

INTERVIEW WITH PRINCIPALS

DEFINITIONS – CONCLUDING

QUESTIONNAIRE FOR PRINCIPALS, ASSISTANT AND DEPUTY PRINCIPALS

CONCLUDING INTERVIEW

ITEMS AND DEFINITIONS

Question 1: "What maintained your interest in the project?"

FEEDBACK FROM STAFF

An indication of staff satisfaction conveyed to the principals' group.

PROGRAMME CONTINUITY

An indication that the programme was maintained over a long period of time despite any difficulties that might have arisen.

PERSONAL SATISFACTION

The members of the principals' group found personal satisfaction in their work on the programme.

STAFF SUPPORT

The member of the principals' group was aware that one or more members of staff were gaining significant support from the programme.

OBSERVED SUCCESS

Successful outcomes, gains or benefits were perceived by the member of the principals' group separate from or in addition to feedback from other staff or the support for individual staff members or groups of staff.

PROGRAMME VALIDITY

Indicates that the member of the principals' group saw a form of face validity for the programme in a general sense – for example, its utility across the curriculum or in professional development generally.

Question 2: "What factors do you think have had an important influence on the development of the programme?"

STAFF INVOLVEMENT

Staff are seen to have and have a personal interest and involvement; contribute ideas; have a sense of "ownership".

STAFF DEVELOPMENT

Individuals or groups of staff clearly derive benefit from the programme.

CONTINUOUS COMMITMENT

There is evidence of ongoing and continuous momentum to the programme and commitment by both staff and the consultant.

VALUE OF THE CONSULTANT

There is evidence that the consultant is a valuable source of new ideas and a professional development for the staff.

Question 3: "What strategies did you use to interest and involve the staff?"

SUPPORT AND ENCOURAGEMENT

The need was seen to support and encourage staff engaged in the programme.

COOPERATIVE MANAGEMENT

The programme was managed in a cooperative way so that teachers would retain ownership of the programme throughout.

ESTABLISHED TRAINING OPPORTUNITY

(One school only) Established an initial half day training session during the May vacation to ensure staff could make an informed judgement on joining the programme.

CONSULTANT VALUE

There is evidence that the consultant is a valuable source of new ideas and a professional development for the staff.

Question 4: "How did you perceive your role in this project?"

SUPPORT Support to staff working on the programme.

PERSONAL INVOLVEMENT

The member of the principals' group became personally involved in the programme.

NO PERSONAL INVOLVEMENT

A clear statement indicating that though support was given the person was not able to be involved directly in the programme.

FACILITATE/MOTIVATE

To ensure that staff engaged in the programme would remain motivated and have their work patterns supported.

Question 5: "What events and factors that you can identify occurred as the 1991 programme developed?"
"What were the effects of these things?"

GROUP BONDING

An indication that the group working with the consultant bonded as a team and saw themselves as developing a particular expertise – this did not exclude other staff members.

OTHER STAFF INTEREST

Other members of staff within the school took an interest and showed respect for the progress staff were making.

PROFESSIONAL DEVELOPMENT

An indication of significant professional advancement by teachers involved in the programme.

ACROSS CURRICULUM

The application of teaching strategies across the curriculum and the interplay between curriculum departments.

FORWARD PLANNING

A recognition that the programme had clear implications for the following year and that planning should incorporate the new developments for 1992 classes.

Question 6: "What were the sources of pressure and support for you?"

FORWARD PLANNING

A recognition that the programme had clear implications for the following year and that planning should incorporate the new developments for 1992 classes.

GROUP BONDING

An indication that the group working with the consultant bonded as a team and saw themselves as developing a particular expertise – this did not exclude other staff members.

Question 7: "How will you use new knowledge that emerges from the programme?"

FORWARD PLANNING

A recognition that the programme had clear implications for the following year and that planning should incorporate the new developments for 1992 classes.

Question 8: "What do you see to be your role now in staff development?"

FORWARD PLANNING

A recognition that the programme had clear implications for the following year and that planning should incorporate the new developments for 1992 classes.

Question 9: "What do you expect the school to get out of this project?"

STAFF MORALE

The programme has a direct and positive effect on the morale of staff.

ATTRACT STAFF

Qualified teachers seeking positions will be attracted to a school which is known to be running effective programmes.

Question 10: "How do you see the structures of your school organisation being supportive of teachers in further development?"
"Will there be a need for any additional support structures?"

FUTURE PLANNING

A recognition that the programme had clear implications for the following year and that planning should incorporate the new developments for 1992 classes.

STAFF ORGANISATION STRUCTURE

Timetable and staff development structures must enable this kind of programme to continue.

SPECIFIC SUPPORT

A specific support system must be established as the programme will not be self sustaining without it.

Question 11: "To what extent do you believe that collegial management of this development programme was desirable or possible?"

NEEDS A CONSULTANT

There is a need for a consultant to assist the school in maintaining a collegial management system.

Question 12: "What have been the most noticeable changes resulting from the programme?"

INCREASED STAFF COMMITMENT

An indication of increased commitment to professional development and enthusiasm for programme effects on classroom teaching.

SCHOOL CLIMATE

An indication of a positive change in school climate as a result of staff interest and enthusiasm.

FOCUS ON LEARNING AND TEACHING

An indication that there is a greater focus among teachers on the programme in the teaching learning process.

SUPPORTED DEVELOPMENT

The programme provided a supportive environment for teachers to experiment and develop innovative programmes.

ASSISTED STUDENTS

Evidence of improvement in student performance or classroom learning programmes.

COMMITMENT

A sense of commitment; a sense of vocation.

Question 13: "What administrative structures might need altering to ensure a continuance of a strategic approach in the school?"

TOP THREE INVOLVEMENT

There is a continuing need for at least one member of the top three to be involved actively in the programme.

LEAD/COORDINATOR

An indication of a need for a coordinator/a person who can lead from within the team of teachers.

PROVISION OF SUPPORT

An indication that some form of support from a consultant or in another form would be necessary to maintain the programme.

OTHER STAFF INVOLVEMENT

The need to find a way to involve staff not already active in the programme.

NO SUBSTANTIAL CHANGES

COMMITMENT

A sense of commitment; a sense of vocation.

Question 14: "If you were starting this project again, what would do differently?"

NO SUBSTANTIAL CHANGES

PEER OBSERVATION

An indication that there is a need to ensure teachers are able to visit each other's rooms and offer peer review of activities.

CONSULTANT RELATIONSHIPS

If a new consultant were introduced, then, time for the consultant to build relationships with staff to ensure the effectiveness of the consulting advice.

CONTINUITY

The programme should run for longer and be maintained.

OTHER STAFF INTERACTION

A greater opportunity for the consultant to mix with other staff and for staff on the programme to inform their colleagues of programme activities.

Question 15: "What is the value of an outside consultant to a school, and can you compare that to a support teacher within the school?"

NEEDS CONSULTANT

An indication that a consultant with expertise and credibility in the school is essential to the success of the programme.

NEEDS LIAISON

The need for a person within the school to act as a liaison and key contact for the consultant.

SUPPORT TEACHER INAPPROPRIATE

While a support teacher can play an effective role in some aspects of the school programme, they would not have the skill, expertise, access to research and development literature nor consulting skills to carry out the task.

Question 16: "As staff training, how valuable is it to have regular visits or contact with teachers from a consultant or professional developer?"

ESSENTIAL/IMPORTANT

Indicating that the contact with the consultant is regarded as essential or at least important to the ongoing development staff.

TIME Where a respondent volunteered a time, or where questioning led to a time being specified, the times specified were once a week (2), once a fortnight (2). Choices are indicated in brackets.

REGULARITY OF VISITS

An indication that regularity of visits would be an essential component of staff development consultation.

DIARIES An indication that the diary method used during the programme was an essential element.